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A RÉSUMÉ OF FIFTY-ONE CASES OF INTUSSUSCEPTION.¹

By P. L. Hipsley, M.D., Ch.M. (Syd.),
Assistant Surgeon, Royal Alexandra Hospital for Children,
Sydney; Assistant Surgeon, Royal Hospital for
Women, Paddington.

Intussusception is a complaint of peculiar interest in many ways, one being its extremely sudden onset in infants who have previously been in particularly good health, and its disastrous consequences, if for any reason its presence is overlooked by the doctor who first sees the child. Very seldom are the parents to blame for neglect in seeking advice, as the mother is not likely to fail to observe that something is seriously wrong with her child, who, prior to the onset of the complaint, was so well. But the doctor who sees the child some time after the onset, does not see it always at its worst, as the initial stages of the shock it was suffering from may have passed off. It is advisable, therefore, always to listen carefully to the mother's description of the onset of every sudden illness in a young child, and not to be too hasty in coming to the conclusion that the child has been swallowing something that it should not have had. However, there is no doubt that each year these cases are being recognized earlier by our medical men. It is not my intention to go into the symptoms, diagnosis and treatment of this complaint in detail, but I merely wish to record my experience of the first fifty-one cases which I have had an opportunity of treating.

In the following series of fifty-one cases, fifty of which were operated upon, there was no death where the child was operated upon within 36 hours of the onset of symptoms. Four of the children died; in one case the symptoms had been present for just over 36 hours, in two others the children had been ill for three days, and in the fourth case the child had been ill for four days. Indeed, in two of these cases the infants, when brought to the operating table, were *in extremis*, and it was questionable whether they should have been operated upon at all. However, seeing that there is a chance of cure, even in the most desperate-looking cases, all were operated upon, no matter how bad they appeared to be.

In considering these cases, I will take first of all the four unsuccessful ones.

(1) A.S., male, aged three years. Four and a half days prior to admission to hospital the child was taken ill suddenly, with an attack of screaming. The mother said that "the child went deadly pale, and seemed to be in great pain." He got gradually worse, and for three days had passed nothing but blood and slime. He had also been vomiting incessantly, and looked desperately ill, with eyes sunken, abdomen distended and a pulse-rate of 160. No mass could be felt because of the distension. Under ether an incision was made close to the middle line, and on the abdomen being opened free, foul fluid escaped. A large intussusception was delivered, but it could not be reduced at all. Resection was attempted, as about 60 cm. of the gut was gangrenous. The child died shortly after the operation.

(2) C.K., female, aged six months, had had typical symptoms of intussusception for three days. On opening the

abdomen it was found to be impossible to reduce any of the involved gut, so about 22.5 cm. had to be resected. The child was too bad for an anastomosis to be done, so a couple of Paul's tubes were tied into the open ends of the bowel. The infant died immediately after the operation.

(3) J.J., male, aged five months. The mother said that the child was perfectly well until it suddenly started to cry and draw up its legs. It showed symptoms of being in pain, but did not scream loudly, nor get very pale. A doctor was called in and prescribed some powders. The next day he again saw the child and suspected intussusception. After examining it under chloroform and giving it a bowel wash out he sent it into hospital. The resident medical officer, an experienced man, could not feel a mass, even under an anæsthetic, and so decided that it had been reduced. However, as the symptoms got worse during the night, I was sent for and decided to operate; this was three days after the first symptom. On operating I found a small intussusception, not at all hard to reduce, beginning at the tip of the caecum. The child seemed well for three days, and then the abdomen began to get distended. The child died on the fifth day. A post-mortem examination revealed general peritonitis. Evidently this was a case where the trouble was partially reduced by the bowel wash out, and although the long duration of the case did not cause gangrene nor any difficulty in reduction, still there must have been sufficient damage to the bowel wall to allow of its penetration by organisms leading to general peritonitis.

(4) M.R., male, aged six months, had had symptoms of intussusception for just over 36 hours prior to operation. The usual middle line incision was made, and a very large intussusception was found, involving the ileum and extending into the descending colon. The last 5 cm. were found to be very difficult to reduce, and during the manipulation the peritoneum was extensively torn, necessitating several sutures. By the time the bowel was reduced, the child was in a critical condition, and, contrary to my usual practice, the abdomen was closed in a single layer by silk-worm gut sutures. The child died twelve hours after the operation.

The next case I would like to record was a rather remarkable one from the point of view of the child's endurance.

J.B., male, aged eleven-months, was admitted to hospital with a history of intussusception of sixteen hours' duration. On opening the abdomen the intussusception was found to commence at the ileo-caecal valve. It was reduced with the greatest ease and the abdominal incision was closed in layers. On the day following the operation the child was still vomiting and looked very ill, and as the bowels could not be got to move I decided to re-open the abdomen, as I suspected either a recurrence, or else a second intussusception, which had been overlooked. The first incision was opened again, and a little blood-stained fluid escaped from the peritoneal cavity. Nothing, however, could be found to account for the recurrence of symptoms of intestinal obstruction. The abdomen was closed this time in a single layer. The child began to improve at once, and left the hospital two weeks later, apparently quite well. Five weeks later it returned with symptoms of incomplete obstruction. On opening the abdomen a loop of small gut was found to be adherent to the peritoneum in the neighbourhood of the abdominal incision; this was freed, and the wound closed in a single layer. The following day the child was still vomiting and its general condition was exceedingly bad. As its chances of recovery were remote without another operation, I decided again to open the abdomen. This time I turned the whole of the bowel out through the wound. A section of the small bowel was found, which had evidently been occluded, as it was quite collapsed and the adjoining portion was distended, but no bands or adhesions were seen to account for the obstruction. However, no time was wasted in looking further, and the bowel was rapidly returned. The child picked up after the operation, but unfortunately the wound suppurated, and on the edges separating the bowel was exposed. It did not prolapse, however, but in about ten days a fistula

¹ Read at a Meeting of the New South Wales Branch of the British Medical Association on August 30, 1918. The discussion on this paper was published in the issue of September 28, 1918, p. 272.

formed. The large, gaping wound gradually closed in, leaving just a small fistula. The child got quite strong and well. Five months later it died after an operation to close the fistula.

This concludes the list of cases in which death supervened, either as the immediate result of the operation or later on from causes indirectly due to the original trouble. I should like now to mention the cases that recurred after operation.

(1) J.P., aged five months, was operated on three times for the same complaint within ten weeks. The first operation was done six hours after the onset of the trouble. The intussusception began at the tip of the caecum and was easily reduced. The child made a good recovery and was discharged from hospital quite well. Five weeks later it returned with similar symptoms. On operating again the intussusception was found to begin at the same place as on the first occasion, i.e., at the tip of the caecum. The infant again made a good recovery, and left the hospital in two weeks. Three weeks later it again came back with similar symptoms. This time a muscle splitting incision was made, similar to that commonly used for the removal of an appendix. The intussusception again began at the tip of the caecum, and after it had been reduced the tip of the caecum was stitched to the peritoneum in the region of the iliac fossa. As far as I know, the child did not get another attack.

(2) L.H., male, aged nine months, had been operated on when three months old for intussusception. On the second occasion I performed the operation five hours after the onset of the trouble. The intussusception commenced at the ileo-caecal valve and extended as far as the transverse colon. It was easily reduced, and the child made a good recovery. Eleven months later it was again brought to hospital with similar symptoms, e.g., screaming, vomiting, pallor, etc. A bowel wash out was given, and as the intussusception was apparently reduced, the child was not operated upon. Twenty-four hours later the symptoms recurred, and this time I decided to operate. An intussusception, commencing at the ileo-caecal valve, was found and easily reduced. Five months later this child had another attack. It was brought to hospital, but the trouble was not recognized by the resident doctor who saw the patient. The mother then took it to another hospital, where, as I subsequently heard, it was operated on again, and, I understand, made a good recovery. If one counts the time when it was supposed to have been cured by a bowel wash out as a recovery, then this child had five attacks in all.

There was another patient in the series that had a recurrence and recovered after being operated on by another surgeon. I have not any notes of this case, but the recurrence was about four months after the original operation.

There may, of course, have been other recurrences in the cases mentioned in the series, but these are all that have come under my notice.

A recurrence is sufficiently common to merit a discussion on the question whether some operative means should be adopted in all cases at the first operation, with the object of preventing this occurrence.

In one case quoted above I stitched the tip of the caecum to the peritoneum in the right iliac fossa, and this procedure proved successful. To do this one has to make the incision in the right iliac region, and this is not a suitable position when the intussusception is a large one. Some method of shortening the meso-colon and the right portion of the mesentery would, I think, answer the purpose, as I am sure that the free mobility of this portion of the bowel in children is an important factor in the causation of intussusception. The question of recurrence, of course, hinges on the causation of this complaint. Seeing that intussusception generally occurs in children who

are in exceptionally good health, I am of the opinion that we have to look for the cause in some anatomical rather than pathological condition. I do not intend to go fully into the question of the causation of intussusception, as I read a paper on this subject before the New South Wales Branch of the British Medical Association some years ago.

One other case which I would like particularly to mention is one which required resection and in which recovery took place. This was a child, aged seven months, who was operated on about forty hours after the symptoms began. About 25 cm. of the gut had to be resected. This case was fully reported in *The Medical Journal of Australia*, January 13, 1917.

The only intussusception which I reduced without abdominal section was in a male child, aged eight months, first seen about eight hours after the onset. A mass could be felt in the right lumbar region. I gave an anaesthetic and injected olive oil and water into the bowel. I could feel the mass get smaller and smaller whilst manipulating it, until it finally disappeared altogether. I watched the child closely for some time afterwards, but there was no recurrence of the trouble. This method of treatment, the so-called bloodless reposition method, has given rise to a good deal of controversy. Some surgeons condemn it altogether; others use it exclusively and claim excellent results, especially in cases which would require resection after opening the abdomen.

Hirschsprung, the great advocate of this method, uses intermittent water pressure from a height of 65 to 85 cm., and claims 85% of cures in all cases. There is no doubt of the value of the method, provided the surgeon can keep a close watch on the child for several hours, in order that he may be sure that the intussusception has been completely reduced.

With regard to the sex of the children, 42 of the operations were done on males and eight on females.

The youngest child was four months old and the oldest two years and eleven months.

The majority of the infants were particularly healthy and well-nourished before the onset of the trouble.

Of the cases where the origin was noted, 21 began at the ileo-caecal valve and 19 at the tip of the caecum, just above the junction of the anterior and lateral longitudinal muscular bundles. Six began in the ileum at a point varying from 2.5 to 12.5 cm. from the ileo-caecal valve, and in two of these, after reaching the valve, the ileac portion was arrested and the ileo-caecal valve became the new apex, that is to say, they were of the double variety.

The incision used in nearly all cases was one of from 6 to 7.5 cm. in length, made with the umbilicus at its centre and just to the right of the middle line. The sheath of the rectus was opened and the muscle retracted to one side. The incision in the peritoneum was, in most cases, made just long enough to admit two fingers. It is seldom necessary to make a longer incision, because even a long intussusception can be partially reduced inside the abdomen by manipulation between the hand outside and two fingers inside. The wound in all but two or three cases was sutured in layers, care being taken to insert at least four silk-worm gut sutures to re-inforce the catgut. These are

Tabulated Record of Fifty-one Consecutive Cases of Intussusception.

Number	Name.	Age.	Sex.	Variety.	Duration.	Treatment.	Result.	Remarks.
1	S.B.	6 months	Male	Ileo-caecal	9 hours	Laparotomy	Recovery	Appendix removed.
2	E.T.	9 months	Male	Ileo-caecal	6 hours	Laparotomy	Recovery	_____
3	J.B.	6 months	Male	Tip of caecum	33 hours	Laparotomy	Recovery	_____
4	R.G.	9 months	Male	Ileo-caecal	5 hours	Laparotomy	Recovery	_____
5	F.A.	14 months	Female	Ileo-caecal	9 hours	Laparotomy	Recovery	_____
6	C.H.	9 months	Male	Ileo-caecal	16 hours	Laparotomy	Recovery	_____
7	E.B.	8 months	Female	Tip of caecum	26 hours	Laparotomy	Recovery	_____
8	R.D.	7 months	Male	Double	11 hours	Laparotomy	Recovery	Began 2.5 cm. from the ileo-caecal valve, and, after passing through the valve for several centimetres, this mass passed into the caecum and ascending colon. The bowel was very dark, but had not lost its glossy surface.
9	C.D.	14 months	Male	Double	44 hours	Laparotomy	Recovery	Began at the top of the caecum, and, after becoming arrested in the ascending colon, the mass so formed became a second intussusception into the transverse colon.
10	B.W.	12 months	Male	Ileo-caecal	18 hours	Laparotomy	Recovery	_____
11	A.B.	12 months	Male	Ileo-caecal	5 hours	Laparotomy	Recovery	_____
12	F.E.	9 months	Male	Ileo-caecal	7 hours	Laparotomy	Recovery	_____
13	M.C.	5 months	Female	Ileo-caecal	5 hours	Laparotomy	Recovery	_____
14	W.K.	8 months	Male	Not stated	7 hours	Laparotomy	Recovery	_____
15	R.W.	10 months	Male	Enteric	18 hours	Laparotomy	Recovery	Began 3.7 cm. from the ileo-caecal valve.
16	A.J.	5 months	Female	Tip of caecum	6 hours	Laparotomy	Recovery	_____
17	R.D.	6 months	Male	Ileo-caecal	10 hours	Laparotomy	Recovery	_____
18	B.C.	5 months	Male	Tip of caecum	30 hours	Laparotomy	Recovery	_____
19	R.Y.	7 months	Male	Enteric	32 hours	Laparotomy	Recovery	Began 5 cm. from the ileo-caecal valve.
20	J.B.	11 months	Male	Ileo-caecal	16 hours	Laparotomy	Recovery	Recovered with faecal fistula. Died five months later after an operation to close the fistula.
21	W.A.	10 months	Male	Ileo-caecal	14 hours	Laparotomy	Recovery	_____
22	W.D.	4 months	Male	Ileo-caecal	6 hours	Laparotomy	Recovery	_____
23	L.G.	6 months	Male	Enteric	6 hours	Laparotomy	Recovery	Began 2.5 cm. from the ileo-caecal valve and extended into the sigmoid.
24	H.K.	10 months	Male	Ileo-caecal	4 hours	Injection	Recovery	Reduced by injection of saline and manipulation.
25	P.F.	5 months	Female	Tip of caecum	24 hours	Laparotomy	Recovery	_____
26	V.T.	6 months	Female	Tip of caecum	9 hours	Laparotomy	Recovery	_____
27	B.A.	4 months	Male	Ileo-caecal	4 hours	Laparotomy	Recovery	_____
28	E.C.	2 ¹ / ₂ years	Male	Ileo-caecal	23 hours	Laparotomy	Recovery	_____
29	R.L.	7 months	Male	Not stated	36 hours	Laparotomy	Recovery	Twenty-five centimetres of gut had to be resected and a lateral anastomosis done.
30	M.M.	10 months	Female	Tip of caecum	12 hours	Laparotomy	Recovery	_____
31	J.J.	8 months	Male	Enteric	10 hours	Laparotomy	Recovery	Began 2.5 cm. from the valve.
32	W.A.	5 months	Male	Double	40 hours	Laparotomy	Recovery	Began 7.5 cm. from the valve, and was arrested soon after passing through; then the mass passed on as far as the hepatic flexure.
33	J.S.	5 months	Male	Tip of caecum	60 hours	Laparotomy	Death	Died of general peritonitis several days after operation.
34	M.R.	6 months	Male	Tip of caecum	37 hours	Laparotomy	Death	Was very difficult to reduce. Peritoneum torn in several places.
35	N.F.	8 months	Male	Enteric	44 hours	Laparotomy	Recovery	Began 12.5 cm. from the valve.
36	D.C.	5 months	Male	Tip of caecum	5 hours	Laparotomy	Recovery	_____
37	E.C.	5 months	Male	Ileo-caecal	12 hours	Laparotomy	Recovery	_____
38	L.H.	9 months	Male	Ileo-caecal	5 hours	Laparotomy	Recovery	A recurrence after 3 months.
39	L.H.	9 months	Male	Ileo-caecal	12 hours	Laparotomy	Recovery	_____
40	C.K.	6 months	Female	Not stated	3 days	Laparotomy	Death	Several centimetres of the gut was gangrenous. Paul's tubes tied into the cut ends of the bowel. Child died soon after operation.
41	A.S.	3 years	Male	Not stated	4 ¹ / ₂ days	Laparotomy	Death	Resection done, but child died four hours after operation.
42	N.O.	10 months	Male	Tip of caecum	24 hours	Laparotomy	Recovery	Appendix removed.
43	N.O.	12 months	Male	Tip of caecum	9 hours	Laparotomy	Recovery	_____
44	W.S.	7 months	Male	Tip of caecum	15 hours	Laparotomy	Recovery	_____
45	M.A.	9 months	Male	Ileo-caecal	12 hours	Laparotomy	Recovery	_____
46	H.E.	2 ¹ / ₂ years	Male	Ileo-caecal	7 hours	Laparotomy	Recovery	_____
47	M.F.	4 months	Male	Tip of caecum	12 hours	Laparotomy	Recovery	_____
48	E.C.	4 months	Male	Tip of caecum	29 hours	Laparotomy	Recovery	_____
49	J.P.	5 months	Male	Tip of caecum	6 hours	Laparotomy	Recovery	_____
50	J.P.	5 ¹ / ₂ months	Male	Tip of caecum	6 hours	Laparotomy	Recovery	_____
51	J.P.	5 ¹ / ₂ months	Male	Tip of caecum	7 hours	Laparotomy	Recovery	_____

tied over a thick strip of gauze, and after covering this with a narrow pad, wide strips of adhesive plaster are fixed over all, so as to cover completely the whole of the gauze below and up to the top of the pad. The strapping prevents any soiling of the wound, and the dressing is left undisturbed for eleven or twelve days, when all sutures are removed. I mention these details in the making, closing and dressing the wound because I regard them as very important. In looking over records of series of cases which have been reported I have noticed that a number of deaths have occurred, either from peritonitis, attributable to infection spreading along silk-worm gut sutures, which have been passed through all the layers of the abdominal wall, or to the wound having given way a week or more after the operation, resulting in the bowel being prolapsed into the bed. Such accidents are not likely to happen if the incision is not too long and if the abdomen is sutured in layers. There is another danger in using silk-worm gut sutures through all the layers of the abdominal wall, and that is they sometimes lead to adhesions and cause intestinal obstruction, even years after the original operation.

SOME COMMON FAULTS IN MIDWIFERY PRACTICE.¹

By **Ralph Worrall, M.D., M.Ch.**,
Honorary Gynaecologist to the Sydney Hospital.

The Medical Secretary asked me to fill a gap and read a paper on a midwifery subject; I consented in the hope that it would at least excite comment and stimulate consideration of that branch of medical practice, which, always important, is doubly so at the present time.

What I have to say is based entirely on what I see and hear in my daily work, and does not pretend to be in any way complete.

The first fault in midwifery practice to which I invite attention may give rise to amusement; nevertheless, I am serious when I state my belief that cheap midwifery is largely responsible for bad midwifery. Cheapness begets haste, and haste begets shoddy, while the very foundation of safety and success lies in patience and a complete disregard of the flight of time.

The public have been taught to value and avail themselves of many recent innovations in the diagnosis and treatment of disease, such as X-rays, modern dentistry, vaccines, and others. They must also be taught that pregnancy should be supervised, that the obstetrician should make a thorough examination of the various systems at the time of engagement, that regular analyses of the urine should take place, and, finally, that the presentation and presence or absence of complications in mother or child should be investigated during the last month.

If such a system were generally followed eclampsia would be very rare instead of constituting, as at present, such a serious cause of mortality; malpresentations would be detected and corrected prior to labour; appropriate treatment would be adopted for neoplasms, such as ovarian cysts and myomata; any un-

usual conditions of the fetus, such as hydrocephalus and polycystic disease of the kidneys would be discovered; finally, the practitioner would answer the call to attend freed from anxiety and uncertainty as to the conditions which he might find, and the wear and tear of midwifery practice would be correspondingly decreased.

I have seen deaths from septic infection in the puerperium due to ovarian cysts (torsion of pedicle), myomata (sloughing from traumatism), polycystic disease of fetal kidneys (injuries to and infection of mother from prolonged attempts to deliver).

I have also seen pelvic contraction not diagnosed until late in labour, although with the patient erect it was apparent to the eye by the manner in which the fetal head rode over the pubes. This patient was saved by Cesarean section and total hysterectomy of the infected uterus.

The undue protraction of pregnancy seems to be ignored by all but a few; in my experience it leads to most untoward consequences. No pregnancy should be allowed to continue more than two weeks beyond the calculated date if the history coincides with the measurements. At full term the fundus should be 33.7 cm. from the pubes (the bladder and rectum being empty).

In doubtful cases an anæsthetic should be given and an estimate formed according to the ease or difficulty with which the head can be pushed into the pelvis.

With regard to the methods of inducing labour in such circumstances, the most reliable seems to be the bougie and gauze. I have twice succeeded by passing my gloved finger through the disinfected os and sweeping it around, so as to separate the membranes. Thirty mls of castor oil, with four 0.18 gramme hourly doses of quinine has also been of help. In America the Voorhees bag is largely used.

Few patients seem to have had instilled into them the importance of hygiene during their pregnancy, or how peculiarly injurious is alcohol at such a time. In this connexion I should like to say that horse breeders have told me that difficult and dangerous labours were noticeably frequent in mares which were fat from too much food and too little exercise. In the accouchement of human mothers I think the experience of obstetricians generally is that thin, wiry women have the easier time. The moral is that exercise to the last should be enjoined and carbo-hydrates restricted, especially in the latter months.

Before leaving this part of the subject, I should like to urge that it be the invariable rule for the doctor to inform the patient before accepting an engagement that it is his duty to examine the various organs, and also during the last month to ascertain the presentation and that a fee would be charged for this work. The patient would also be expected to send the urine in for analysis every fortnight of the last three months.

If it were also stated that the fee agreed upon for the confinement would include ten visits, but no more, a frequent cause of disputes would be avoided.

I am gratified to recall that I was one of the first to raise fees for midwifery. I believe it is the interest of the public and of the State that this vitally important work should be adequately remunerated.

¹ Read at a Meeting of the New South Wales Branch of the British Medical Association on September 27, 1918.

The Application of Forceps.

During labour I believe the most common fault is the application of the forceps before the full dilatation of the os. I base this statement on the large number of women whom I see with lacerated cervixes, associated with dense scars extending into the fornices. A lacerated cervix may occur in unassisted labour from strong uterine action, especially when associated with poorly developed or altered tissue, but I have never yet seen a scar across the vaginal vault without a history of forceps, and frequently of premature rupture of the membranes, with delayed labour, preceding the use of the forceps.

The forceps is a tractor, contra-indicated unless the passages are fully dilated and normal. Whatever defect may exist in imperfect dilatation or morbid condition, such as dense cicatrices, neoplasms, etc., must be successfully dealt with prior to the use of this instrument. If it should be necessary to apply forceps before the full dilatation of the os, the dilatation should be first completed by the de Ribes' bag or Harris' manual method, or Bozzi's dilator; the latter two methods are only suitable if the cervix has been "taken up" and is soft and yielding; even then there is danger of inflicting grave injury, unless great care be taken to avoid haste and force; the time occupied should be checked by the watch, to ensure dilatation and not tearing.

Admitting there is danger in all methods of artificial dilatation of the cervix, I believe there is far greater risk in applying forceps in the presence of incomplete dilatation.

I should like to refer to one contingency for which text-books do not furnish clear guidance, and that is the rupture of the membranes several days before the onset of labour. Should the case be left to Nature, or should active measures be taken to dilate the cervix and determine labour? In the absence of danger threatening mother or child I advocate the former course, and that notwithstanding the tragedy involved in the second of the following cases.

Case I.—Elderly primipara, at about full term, membranes ruptured four days before any pains whatever; lingering labour, owing to rigidity and slow dilatation of the os, eventually terminated spontaneously with living child; temperature of about 37.8° C. from the third to ninth day; good recovery; four children since.

Case II.—Elderly primipara at about full term, membranes ruptured three days before onset of labour pains; fetal heart heard up to second stage; labour terminated naturally; total duration of labour, about twelve hours; child born dead; normal puerperium; no injury to cervix; examination several times subsequently showed the pelvis to be normal, except that the uterus is too large and hard. The patient was in apparent good health, and was extremely anxious for children, but has not again become pregnant, and I fear considers myself the cause of her blighted hopes. Both the patient and her only sister suffered from delayed puberty and scanty, irregular menstruation.

Occipito-Posterior Positions.

Some twenty years ago a doctor practised in Sydney who did a large midwifery practice and enjoyed talking about the subject in which he believed himself to excel. I have heard him say he could always diagnose an occipito-posterior position by the fact that "the nippers" (forceps) were prone to slip. It did not seem to have occurred to him that he should have made the diagnosis previously. I fear that, even now, his attitude is too frequently followed. I have been

called in to do craniotomy by two practitioners who had made repeated, unavailing efforts to deliver with forceps, without suspecting that they had to deal with an occipito-posterior position. It was easily rotated from the third to the second vertex by pressure with two fingers of the left hand in the vagina on the left side of the sinciput, while the right hand pulled the child's left shoulder from the right towards the left, the forceps were then applied and delivery very easily accomplished.

In more difficult cases I have effected rotation by inserting the whole hand into the vagina and seizing the head with the fingers and thumb. The posterior ear may be taken as a guide.

If, on making traction in such a case, the forceps tend to invert—that is, for the pelvic curve to look backwards instead of forward—it is better to take the instrument off and re-apply it.

The diagnosis of occipito-posterior positions is not difficult if one practices external palpation in every case.

Judging from the large number of women with relaxed pelvic outlets following on instrumental delivery, I am inclined to think traction with the forceps is too rapid and sustained in many instances. Nature should be imitated in her gradually and intermittently applied force.

Management of the Third Stage.

Perhaps of all mistakes in midwifery practice, the most dangerous is undue haste in the third stage. Efforts to express the placenta before separation, as indicated by the rising of the fundus and lengthening of the extruded cord, are reprehensible, and will surely lead to disaster. It is surprising how frequently one can obtain a history of trouble in the third stage in cases of puerperal infection. In the absence of hæmorrhage or other untoward symptom, "watchful expectancy" should be the rule. In one case I waited one hour and forty minutes and was rewarded by the placenta coming away easily with a minimum of hæmorrhage.

The retention of the placenta is almost invariably due to inertia or faulty uterine contractions; adhesions are extremely rare; the introduction of the hand into the uterus for the purpose of removing the placenta must be held to be a very dangerous operation, only to be resorted to after due consideration and in the presence of clear indications, such as hæmorrhage and failure to empty the uterus completely by expression of its contents. I believe, however, that the uterus should be completely emptied, even if this can only be accomplished by introducing the hand; to wait until symptoms of infection declare themselves is often to wait too long to save life.

Retention of membranes can often be avoided by allowing the uterus to relax during the extrusion of the placenta through the vulva.

The Pelvic Floor.

Faulty repair of the pelvic floor is extremely common, which is not surprising when one considers the defective light, insufficient help and generally unfavourable conditions under which it is often attempted. The more frequently noted defects have been that there is a "skin perineum," but the torn

muscular and fascial elements have not been united by deep suturing; the posterior vaginal column, which has torn away from its lower attachment and retracted up, has not been re-anchored in normal position by including its raw, under surface in the sweep of the "crown" suture. The result is that the normal curve and shape of the vagina have not been restored; there is interference with vaginal drainage during the puerperium, and subsequent weakness of the pelvic floor, with prolapse.

I suggest that, if the light be bad, suturing should be postponed until daylight, when, under general anaesthesia, with the patient across the bed, held in the lithotomy position by a Robbs' canvas strap leg holder (which can be boiled), accurate approximation of torn surfaces may be made.

For the vaginal tears running up the sulci or elsewhere plain catgut sutures will suffice, but I believe it is a mistake to use any but silk-worm gut and horse hair for perineal sutures.

If the sutures are drawn at all tightly they will cut out in the oedematous swelling which always follows recent tears.

A pledget of wool squeezed out of weak biniodide solution may be placed in the vagina, to keep clear the field of operation during suturing.

I use full curved needles, round for vaginal work, and Hagedorn for the perineum.

If a needle be broken in the tissues and cannot be found, it is wise to tell the friends that this has occurred, but that it is of no consequence, and will be removed later. I mention this because of the recent action for damages against a suburban practitioner for having failed to remove a broken needle. The case went against the medical man.

Involution.

Subinvolution and displacement of the uterus are very common, and might be less so were more attention given to involution during the puerperium. The fundus is about 12.5 cm. above the pubes a few hours after delivery. On the second day it begins to fall at the rate of about 1.8 cm. each day, and by the ninth or tenth day should nearly reach the pubes. Many years ago Alexander McLennan, of Glasgow, pointed out that the rate of involution had an important bearing upon diagnosis, prognosis and treatment. Thus a rise of temperature without a corresponding rise in the fundal height should make one less anxious than if both rose synchronously; one should look outside the uterus for the cause of the pyrexia in such a case. The greatest delay in involution occurs in sapraemic endometritis. "A high fever with little, but sustained, rise in the height of the fundus indicates, besides mischief in the uterus, a more serious lesion outside of it." I believe the charting of the fundal height is a valuable procedure in the puerperium.

To take the measurements I use a brass stationer's foot measure, which is easily sterilized by boiling. The precaution must be observed of seeing that the bladder and rectum are empty. Daily friction of the uterus and sitting the patient up in bed for meals will aid involution.

On the other hand, too early resumption of household duties, involving lifting, standing or walking be-

yond a limited extent, will retard it. At the end of the third week a bimanual examination should be made, and any defect, such as malposition, noted.

In conclusion, I can only hope that these few practical points will be so amplified and added to in the discussion as to be of value to those about to commence the practice of midwifery.

NOTES ON THE INFLUENZA EPIDEMIC.

By A. L. Buchanan, M.B. (Sydn.),

Lieutenant-Colonel, Army Medical Corps, Australian Imperial Force, No. 2 Australian Auxiliary Hospital.

The epidemic of so-called "Spanish influenza" invaded London about the middle of June.

The first case in hospital was that of an officer, who was attacked on June 7. On the 9th three or four cases made themselves apparent. In one case direct infection from the first case could be traced.

In the others, no obvious source of infection was traced. Up to the 15th there were altogether about 50 cases in hospital. All ranks were attacked, officers, nurses, patients, V.A.D.'s and orderlies suffering in like proportion.

Method of Transmission.

The disease was extraordinarily infectious, and the method of transmission could be well observed in a ward consisting of bed patients. The usual thing was for one or two patients who were walking about to show symptoms of the disease. These were (at the beginning of the epidemic) immediately isolated. As early as 24 hours later a dozen patients in the same ward would show clinical signs.

In wards "F" and "G" the incidence was as follows: On the first day one patient in "F" ward; on the second day six patient in "F" ward; on the third day all patients but one in "F" ward and three cases in "G" ward; on the fourth day all patients but three in "G" ward.

It should be noted that "F" and "G" wards are in charge of the same sisters and orderlies, and that there was a certain amount of communication between the patients themselves.

The suddenness with which a whole ward could be infected gave rise to the discussion as to the possibility of an air-borne infection, but after careful investigation there seemed no reason to think that the infection was not by direct transmission, allowing for the fact that the infection was extremely virulent.

Out of a total of 520 patients in hospital, 260 were actually reported sick and put to bed. Allowing for a certain proportion of "up" patients (roughly, 50% of the whole) who had a mild infection, and evaded examination in order to avoid a lengthened stay in bed, the following are, roughly, the percentages affected: "Bed" patients, 80%; "up" patients, 55%; officers' staff, 50%; nurses' staff, 50%; V.A.D.'s, 30%; and orderlies, 30%.

Clinical.

Clinical symptoms were simply those of acute toxæmia: a severe form of frontal headache, pains in the back and limbs, dizziness, loss of appetite, tendency to vomiting and diarrhoea and prostration.

Signs.

Excepting very slight pharyngitis and conjunctivitis, physical signs were absent. No serious complications were noted in any of the cases observed.

Sequelæ.

The commonest sequelæ was in the form of nervous debility, depression, nervousness, tendency to sleeplessness and irregular appetite. These symptoms, however, yielded in the course of a few days to rest and treatment.

Course.

A marked feature of 95% of the cases was the sudden onset and a rapid rise of temperature.

In fully 90% of the cases the temperature fell as rapidly. A fall by lysis was very rare and not at all typical.

The secondary rise in one case gave rise to the suspicion of trench fever, but no history of this disease could be elicited from the patient.

Four similar cases were reported during the epidemic, without any previous history of trench fever, so that this must be regarded as an atypical form of the same disease.

Reviews.**PHYSICAL SIGNS.**

That clinical knowledge should be the coping stone of a medical student's education is prefaced in the seventh edition of Austin Flint's "Manual of Physical Diagnosis."¹ The tendency, even with instructors, is to rely too much on laboratory methods.

Obviously completeness requires that both be used in conjunction, though the latter may be frequently unavailable for the general practitioner.

The manual fulfils the greater part of the student's requirements from the clinical point of view.

The physical basis of signs is fully described, especially in regard to pulmonary diagnosis. The various types of auscultatory and percussion sounds and the causes of the various modifications are analysed and explained. Adventitious sounds are grouped together as râles—moist, consonating, dry, crepitant and sub-crepitant. Moist râles are the bubbling sounds produced in the bronchial tubes; the consonating character may be derived from an adjacent cavity or in a pneumothorax. Dry râles are piping or whistling sounds produced in constricted bronchi. The equivalent term "rhonchi" is nowhere mentioned. Crepitant râles are produced in the finest bronchioles and in the alveoli.

In our clinics the term crepitation is reserved for the moist sound of alveolar origin heard at the end of inspiration. Sub-crepitant râles are defined as very fine bubbling sounds, heard early in the inspiratory act.

Similarly, the terms bronchial and tubular breathing are regarded as synonymous, whereas a distinction is drawn in some clinics, the former applying where there is a rise in pitch in the expiratory period only. There is a need for an international standardization of clinical terms and for graphic representation.

Emphasis is rightly laid on the importance of the history, taken in conjunction with the signs, and on the knowledge of normal variations—a frequent source of error for the unwary. Particularly important is the normal difference found at the right and left apices. A correct interpretation here would prevent many errors, positive and negative, in the diagnosis of early pulmonary tuberculosis. Fetterhoff's explanation is quoted, which "ascribes the difference in intensity and character of the sounds at the right apex to the fact that the trachea is practically throughout its entire length in contact with the right upper lobe."

¹ A Manual of Physical Diagnosis, by Austin Flint, M.D., LL.D.; Seventh Edition, Revised by Henry C. Thacher, M.S., M.D.; 1917. Philadelphia and New York: Lea & Febiger; Post 8vo., pp. 381, illustrated. Price, \$2.50.

The influence of the liver at the right base is not mentioned. It is pointed out that the not uncommon association of pulmonary tuberculosis with emphysema makes the diagnosis of the former difficult in the absence of characteristic sputum. Under acute pulmonary oedema the typical sputum is not mentioned; in fact, the manual suffers from a lack of description of the characters of the sputum in various conditions.

There is a valuable chapter on pulmonary tuberculosis, especially in regard to the early diagnosis of apical lesions.

The latter part of the book deals effectively with the cardio-vascular system, and a short chapter on the examination of the abdomen is added.

Finally, there is a chapter to teach the student the order of physical examination and two standard classifications of pulmonary tuberculosis (Turban's and that of the National Association).

There is no doubt that this is an excellent work for the student and practitioner who feels the need for revision of his clinical studies.

A high standard is maintained throughout, and it will continue to be a standard work on physical diagnosis.

HEART DISEASE.

A strong plea for the more widespread adoption of the "Nauheim treatment" is made in Leslie Thorne Thorne's small book.² The author points out that the treatment can be as efficiently carried out in England (or Australia) as in Germany. There is nothing complicated about it, it merely needs judicious supervision by the medical man and intelligent assistants. Incidentally, it is a matter for wonder that our own Australian mineral spring resorts are not more developed on accredited lines.

The treatment, in effect, is balneological, commencing with "still" baths of sodium and calcium chlorides and ending with carbonated effervescent baths, with resistance exercises as an adjunct.

It is claimed that the cutaneous capillaries dilate, thereby causing a fall of blood pressure; that the cardiac action is strengthened and its frequency diminished, and that the cardiac conductivity is stimulated. The last statement is meaningless; probably it is intended to imply that conduction time is shortened, although the author makes the strange assertion that "auricular or ventricular premature contractions . . . show the existence of impaired conductivity." A carbonated effervescent bath should never be given in the first part of the course. The treatment under supervision is harmless and can be applied to a large variety of cardiac affections, and the large claim is made that the "treatment, properly given, has not only restored many thousands from chronic illness to good health and enjoyment of life, but has prolonged life and relieved great suffering in many serious cases."

The photographic illustrations for the use of resistance exercises are easily followed.

The author regards the "soldier's heart" as a variety of "heart strain," with a mechanical or nervous causation, and "irritable heart" as due to some toxic cause occurring in a neurasthenic and highly-strung patient; views, which are not in line with recent work. These types, and also Graves' diseases, are benefited by baths; the latter in conjunction with X-ray treatment.

This convenient little book—more useful for its aid to practice than to theory—is eminently suitable for practitioners who wish to submit their patients with chronic heart troubles to balneological treatment.

Naval and Military.**CASUALTIES.**

The 438th and 439th lists of casualties were released for publication on October 30 and November 2, 1918, respectively. In them it is reported that Major Wilfred Vickers has been wounded (second occasion) and that Captain Douglas Lewis Barlow, M.C., has been wounded (gas).

² The "Nauheim" Treatment, in England, of Diseases of the Heart and Circulation, by Leslie Thorne Thorne, M.D., B.S., M.R.C.S., L.R.C.P.; Fifth Edition; 1918. London: Baillière, Tindall & Cox; Crown 8vo., pp. 160, with 92 illustrations. Price, 5s. net.

APPOINTMENTS.

The following appointments, etc., have been notified in the *Commonwealth of Australia Gazette*, No. 171, of October 31, 1918:—

Australian Imperial Force.
Army Medical Corps.

To be Captains—

Joseph Ballantine Hogg. Dated 11th October, 1918.
Captain S. C. Jamieson, unattached list, Third Military District. Dated 12th September, 1918.

Australian Naval and Military Expeditionary Force.
Australian Army Medical Corps.

To be Major—

Captain L. H. Hughes. Dated 26th September, 1918.

Australian Military Forces.
First Military District.

Australian Army Medical Corps—

The provisional and temporary appointment of Captain A. A. McKay to be confirmed.

Second Military District.

Australian Army Medical Corps—

The resignation of Captain I. M. Bourke of his commission is accepted. Dated 23rd September, 1918.
Major (temporary Lieutenant-Colonel) W. H. Read to be transferred from the appointment of Officer Commanding No. 21 Australian Auxiliary Hospital, and to be President, Permanent Medical Referee Board, 1st October, 1918, *vice* Honorary Captain (temporary Major) C. Retallack, Australian Army Medical Corps Reserve, who vacates the position and relinquishes the temporary rank of Major, 31st August, 1918; Major W. H. Read retains the pay and temporary rank of Lieutenant-Colonel whilst holding the appointment of President, Permanent Medical Referee Board.

Australian Army Medical Corps Reserve—

J. M. Mehaffey, late Major, Australian Naval and Military Expeditionary Force, to be Honorary Major. Dated 1st November, 1916.

Third Military District.

Australian Army Medical Corps—

The resignation of G. R. Darby of his commission is accepted. Dated 20th September, 1918.

Australian Army Medical Corps Reserve—

Malachi Joseph Robinson to be Honorary Captain. Dated 20th September, 1918.

Fourth Military District.

Australian Army Medical Corps—

The names of Captains J. S. Verco and W. D. K. MacGillivray are as now stated, and not as shown in Executive Minute No. 677, promulgated on page 1895 of *Commonwealth of Australia Gazette*, No. 152, dated 26th September, 1918.

Australian Army Medical Corps Reserve—

Honorary Captain F. W. Noble to be transferred to the Australian Army Medical Corps, and to be Captain, provisionally. Dated 20th September, 1918.

Alfred Austin Lendon to be Honorary Captain. Dated 20th September, 1918.

Captain (Honorary Lieutenant-Colonel) J. Corbin to be Consultant Surgeon, No. 7 Australian General Hospital, and retain the temporary rank of Lieutenant-Colonel whilst holding this appointment. Dated 19th July, 1918.

Robert Welton Hogg to be Honorary Captain. Dated 1st October, 1918.

Fifth Military District.

Australian Army Medical Corps—

Charles Douglas Kerr to be Captain, provisionally. Dated 26th September, 1918.

Sixth Military District.

Australian Army Medical Corps—

Leslie Osborne Macnamara to be Captain, provisionally. Dated 20th September, 1918.

In the District Orders (Third Military District), No. 45, it is announced that Colonel A. H. Sturdee, C.M.G., V.D., A.A.M.C., P.M.O., Third Military District, has been appointed President, and Lieutenant-Colonel G. Horne, V.D., A.A.M.C., Captain (Honorary Major) P. G. Dane, A.A.M.C., and Captain E. F. Greenwood, A.A.M.C. Reserve, Dental Officer, have been appointed members of a Medical Board created in accordance with paragraph 4 (b) of the regulations for the entrance examination, Royal Military College, Duntroon.

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the fortnight ending October 26, 1918:—

	Metropolitan District.	Hunter River District.	Rest of State.	Total.
	Cs. Dths.	Cs. Dths.	Cs. Dths.	Cs. Dths.
Enteric Fever	11 1 ..	0 0 ..	6 0 ..	17 1
Scarlatina	27 0 ..	0 0 ..	7 0 ..	34 0
Diphtheria	75 3 ..	2 0 ..	52 0 ..	129 3
*Pul. Tuberculosis ..	41 15 ..	0 2 ..	0 0 ..	41 17
C'bro-Sp'l Menin. ..	2 0 ..	0 1 ..	1 0 ..	3 1
Pollomyelitis	2 0 ..	0 0 ..	0 0 ..	2 0

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending October 27, 1918:—

	Metropolitan.	Rest of State.	Total.
	Cs. Dths.	Cs. Dths.	Cs. Dths.
Enteric Fever	1 0 ..	0 0 ..	1 0
Scarlatina	27 0 ..	10 0 ..	37 0
Diphtheria	81 1 ..	31 2 ..	112 3
Pulmonary Tuberculosis	26 10 ..	17 5 ..	43 15
C'bro-Spinal Meningitis	1 — ..	1 — ..	2 —
Puerperal Fever	1 — ..	0 — ..	1 —

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the week ending October 19, 1918:—

	Adelaide.	Rest of State.	Total.
	Cs. Dths.	Cs. Dths.	Cs. Dths.
Enteric Fever	0 0 ..	1 0 ..	1 0
Scarlatina	0 0 ..	23 0 ..	23 0
Diphtheria	2 0 ..	21 0 ..	23 0
Pulmonary Tuberculosis	0 4 ..	8 6 ..	8 10
Erysipelas	0 0 ..	4 0 ..	4 0
Morbili	1 0 ..	3 0 ..	4 0
Pertussis	1 0 ..	36 0 ..	37 0
Puerperal Fever	0 0 ..	0 1 ..	0 1

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending October 26, 1918:—

Diseases.	No. of Cases.
Enteric Fever	8
Scarlatina	3
Diphtheria	30
Pulmonary Tuberculosis	14
Erysipelas	3
Puerperal Fever	1

The Medical Journal of Australia.

SATURDAY, NOVEMBER 9, 1918.

Behind the Times.

The idea which Deas Thomson gave expression to over seventy years ago of "appointing some superior functionary to whom could be submitted all measures affecting intercolonial trade, or the general interests of either England or Australia as a whole," does not appear to have penetrated far beneath the surface in many parts of the Commonwealth. We have seen federation an established fact for nearly eighteen years, and during the past four years we have had cause to appreciate the supreme importance of a complete Australia, capable of equipping and sending out an Australian Imperial Force to fight until death and victory side by side with the troops of the other portions of the British Empire and of her Allies. Notwithstanding the many powerful incentives to a consummation of the union of the integral States, and to the realization of a real Commonwealth with large aspirations and wide, general interests, there are few signs of a disappearance of State parochialism and of inter-State jealousies and divergencies. We still suffer under the disharmony of the dual control in commercial affairs, in matters of local government, and even in some matters involving Imperial concern. The health of the community, the Australian community, is still cared for or neglected by six Ministers in six States, and the legislative basis of this control varies in accordance with the degree of knowledge or ignorance of the members of six parliaments. We regret to recognize within the medical profession some reflection of the narrow outlook conceived within the boundaries of a single State. There must be, and it is healthy that there is, some local competition, some inherent pride attaching to the individual component parts of the Commonwealth, but it is highly undesirable that the spirit of Federation should be overshadowed and crushed out of existence by this restricted vision. It is high time to throw off our blinkers and to keep our eyes moving all over our wide, sunny continent.

Some time ago a movement was started by Dr. J. C. Verco, the President of the South Australian Branch of the British Medical Association, to introduce into medical practice the employment of the metric system of weights and measures. The proposal met with approval in the profession throughout the Commonwealth, and in this respect the members displayed a large-minded, federal attitude. The arguments in favour of discarding the stupid, old-fashioned Imperial systems of weights and measures found acceptance in the minds of all scientifically trained persons, and the first steps toward the adoption of this reform were taken. The metric system found its way into the pharmacopœia of many hospitals, sometimes alone, and sometimes in association with the doomed Imperial dosages. Our attention has been directed to an Act which satisfied the wise legislators of the New South Wales Parliament as recently as 1916, and which has the effect of rendering the use of the metric system in prescribing and dispensing illegal. According to the *Weights and Measures Act* the units of weight and measure that may be used, are the units set out in a schedule, and are in effect the units of the Imperial weights and measures. The Act provides for the sale of all articles by avoirdupois weight, except drugs, precious metals and precious stones. Drugs may be sold by apothecaries weight. The only saving clause is in respect of goods purchased from or sold to countries where other standard weights and measures are used. The interpretation placed on the clauses of the Act, as applying to prescriptions, is that both the practitioner and the pharmacist are guilty of a contravention of its provisions, when a prescription is written or dispensed in accordance with the metric system. The pharmacist may not even sell ampoules containing a decigramme or a mil of a drug, and it is doubtful whether the agents of the Federal Serum Institute may dispose of diphtheria antitoxin or tuberculin put up in doses measured in accordance with the metric system. It will be recognized that this illogical position could not be maintained, and that a prosecution for contravening the provisions of the Act in this manner could not be upheld. It is, however, significant that a State Parliament should be so far behind the times. The adoption of standards of this kind is surely a proper duty for the Federal

Parliament to undertake. In the meantime, perhaps the New South Wales Parliament will be wise enough to amend this Act, since the students at the Medical School of the University of Sydney are being taught their dosage by the metric system.

REMUNERATION FOR EFFICIENT SERVICE.

There are two methods of assessing rates of remuneration. The one, the trade union method, is to demand an ever increasing wage, irrespective of the value of the work performed. This method is economically unsound, since a stage must be reached when, in spite of a corresponding increase in the selling price of the commodity manufactured, no commercial undertaking can continue to exist. When this principle is translated to the condition of a person working directly for the consumer or ultimate purchaser, an ever increasing rate of remuneration must lead to the inability of the employer to pay the price. Long before this point is reached the average employer will recognize that the services rendered are not worth the money he is called upon to pay for them. It would be opposed to reason and to the accepted ideals of the medical profession, if this trade union method were adopted in medical practice. The other method is to estimate the value of the service to the person for whom it is performed, and to fix the remuneration on this basis. In arriving at an estimate of this kind, consideration must be had for the conditions under which the services are carried out. A medical practitioner has to live in an expensive house, has to employ expensive domestic servants in his house and in his consulting rooms, often has to engage the assistance of trained nurses, has to travel about in expensive motor cars, and to employ expensive chauffeurs, and has to dress and live more expensively than a man engaged in manual labour. In addition he has invested a considerable sum of money in his technical education, and his services represent the products of a specially trained brain. He gives valuable service to his patients and expects a reasonable, but not prohibitive, fee for those services. When the patient is unable to pay the full value for these services he reduces his fees, either directly, or by accepting a regular premium through the agency of a friendly

society lodge commensurate with the means of his patients. The application of this method involves a varying scale of fees, according to the experience and skill of the practitioner. The public recognize the justice of a higher fee charged by a practitioner who has risen to eminence in one or other branch of medical practice, than the fee charged by a young general practitioner at the outset of his career. Dr. Worrall has recently returned to a doctrine which he has advocated on many occasions. He points out that the safety of a woman in labour depends on the amount of care and skill exhibited by the obstetrician throughout the pregnancy. In other words, he puts up the proposition that, while pregnancy and parturition are physiological processes, the greatest service that can be performed by the doctor is of the nature of prevention of pathological complications. It is within the power of the modern obstetrician in the vast majority of cases to anticipate difficulties and pathological complications, and to avoid the dangers associated with them by timely action. But it would not be in accord with the principle governing the rate of remuneration if the necessary services accorded throughout the pregnancy, and possibly long after the labour, were not taken into account. In the olden days, when the family doctor was engaged to attend at the confinement, he took no further trouble until his patient was in labour, and he ceased to visit her at the end of ten days. To-day he considers it to be his duty to acquaint himself of the anatomical and physiological peculiarities of his patient early in pregnancy, to reassure himself from time to time that the process is developing physiologically, and to invoke the aid of modern chemical and physical investigations at each stage. When this is carried out properly the risk of the woman is reduced to what may be regarded as an irreducible minimum. The service entails an increased expenditure of time and trouble on the part of the practitioner, and is incomparably more valuable to the patient than the services rendered by the man-midwife of old. It is only reasonable that the remuneration should be readjusted. Dr. Worrall proposes the most rational method of assessing the value of these services. Each examination and each attendance given before the commencement of labour, and every visit paid after the tenth day should

be charged for as an ordinary examination or visit in medical practice, and should not be included in the attendance during the confinement. The lodge member is not affected by this arrangement, but all private patients must be taught that this is an extra service for which extra fees are required.

THE DIAGNOSIS OF GONORRHOEA.

The first duty of a medical practitioner when consulted by a patient is to make an accurate diagnosis. The diagnosis must be not only accurate, but minute, and it must be supported by demonstrable evidence. Until the diagnosis is made, it is not permissible to apply treatment, nor is it justifiable for the medical practitioner to hazard a guess and to apply a remedy which might be of benefit should the guess prove correct. The laboratory is often an essential in arriving at the diagnosis, and the necessary investigations may have to be applied by more than one man. The responsibility of having these investigations carried out attaches to the practitioner to whom the patient applies for help, and a neglect to do this places him in an invidious position. There are a few practitioners who claim that clinical methods can be depended on for the purpose of arriving at an accurate diagnosis. While the careful evaluation of clinical signs and symptoms is of undoubted value, no diagnosis can be regarded as certain unless supported by all the evidence that can be adduced. In the case of the diagnosis of gonorrhoea and syphilis confirmation in the laboratory is quite indispensable. The practitioner who pretends that he can diagnose either disease at a very early stage from the clinical manifestations alone, is a danger to the public. The problem of establishing standard routine methods in laboratory investigations has been referred by the Medical Research Committee to a special committee. We have already dealt with a preliminary report of this committee. A second treatise on the laboratory diagnosis of gonorrhoeal infections and on the methods for the detection of the causal organism of syphilis has now been published¹. The Committee deal with the two subjects separately. In regard to the diagnosis of gonorrhoea, it is pointed out that a gonococcal infection in the acute stage is usually readily diagnosed by the intracellular position of the cocci, and their typical morphology and staining reactions. In many clinically doubtful cases, the bacteriological evidence is of the greatest value, but the technique must be mastered and carefully applied, in order that the possibility of an erroneous diagnosis, due to atypical forms, may be reduced to a minimum. In the first place the gonococcus must be sought in films. The material for the films should be derived from the urethral discharge, from the secretion from the deep follicles in the anterior portion of the urethra, Tyson's duct or Cowper's gland, from behind a small, incomplete stricture, from the secretion of the pros-

tate or seminal vesicles, and at times from the urine. The meatus must first be cleansed with a swab saturated with alcohol, and attempts should be made to express secretion from the deeper parts of the urethra. In the next place massage of the prostate, seminal vesicles and Cowper's glands should be employed, and any secretion appearing at the meatus should be used. Following upon this, urine should be passed, and the first 30 c.cm. collected and centrifuged. The deposit should be examined in films, and by culture. Lastly, samples of separated urine from each kidney may be required. If the patient is a female the gonococcus may lurk in the urethra and para-urethral ducts, in the glands of Bartholin, in the cervix, and in the uterus and tubes. To obtain material for films the urethra should be examined for discharge. This may be effected by massaging the urethra through the anterior vaginal wall with the loop end of a hairpin, or by the introduction of the loop into the urethra. Then the cervix should be exposed by means of a speculum, and any secretion present in it or in the uterus may be obtained on a platinum loop. The cervix should first be cleansed with a swab. Lastly, the contents of Bartholin's glands should be expressed.

In order to determine whether a coccus discovered in a film is a gonococcus, it must be recognized that these organisms need not be intracellular. Moreover, leucocytes in the genito-urinary passages may take up other cocci. It must be remembered that the gonococcus is a Gram-negative organism. Owing to the dangers of error in distinguishing Gram-negative from Gram-positive organisms, the Committee recommend that Jensen's technique be accurately followed. In spite of this precaution, it is necessary to recognize that Gram-positive organisms after digestion by leucocytes may lose their characters; that some gonococci derived from very chronic cases may retain the gentian violet stain with unusual tenacity, and appear to be Gram-positive, and that the staining does not distinguish between gonococci and other Gram-negative diplococci. In cases of doubt the cocci should be cultivated. The Committee are unable to decide which is the best culture medium, and suggest that one of the following should be used: Cole's tryptic blood agar, Thomson's human plasma-glucose agar, and Gordon and Hine's trypsinized pea extract agar.

Confirmatory evidence of a gonorrhoeal infection or of its absence may be obtained in certain cases by means of the complement fixation test. While negative results are often obtained in the acute stages, and when vaccines have been used, positive reactions afford valuable diagnostic information, especially in cases of metastatic infection. The test is only reliable when a polyvalent antigen is employed. Torrey has isolated fourteen distinct strains of the gonococcus, and each should be present in the antigen.

It will thus be seen that the diagnosis of gonorrhoea can be definitely established by the detection of the gonococcus in a smear, by the cultivation of the organism from the discharges, and by the specific biological reaction. The diagnosis is reliable only in the hands of a careful worker, whose technique is good, and who has had prolonged experience in laboratory methods.

¹ The Laboratory Diagnosis of Gonorrhoeal Infections; Methods for the Detection of Spirochetes; Report of the Special Committee upon Standardization of Pathological Methods; Medical Research Committee, 1918.

THE HOSPITALS BILL.

The *Hospitals Bill* was again considered in Committee by the Legislative Council of Tasmania on October 29, 1918. It will be remembered that the administration and management of the Tasmanian hospitals have given rise to much dissatisfaction for many years. In Launceston the system of appointing a medical practitioner to the position of superintendent, with full control of the institution, led to a practical monopoly of the surgery carried out in the hospital by the incumbents of this position. Prolonged practice necessarily enabled these practitioners to acquire considerable technical skill in operating. In an ordinary general hospital the honorary surgeon is constantly working under the critical eyes of junior practitioners and visiting doctors, and in this way he is kept up-to-date in regard to scientific diagnosis and pathology. This healthy criticism on the part of colleagues was absent in the Launceston General Hospital. As a result of this system of administration, the people of Launceston were placed under a disadvantage. Instead of having a number of skilled surgeons to attend to the sick poor, only one man obtained any considerable practice. Moreover, the public, being unable to discriminate between manipulative dexterity and sound surgery, conceived the opinion that the Superintendent at the Launceston General Hospital was the best surgeon in the north, and consequently sought his services on many occasions. Well-to-do patients thus came to use the Hospital and incidentally the services of a salaried medical officer. It is stated that in the olden days payment was made direct to the medical officer, but of the accuracy of this statement we have no evidence. During recent years the fees paid for these services have gone to the Hospital. The management of the Institution was defective in other respects, and the same may be said of the Hobart General Hospital. A feeble attempt to place these institutions on a better footing was made by the appointment of two Royal Commissions in 1915 and 1916. The next step was the introduction of a Bill into Parliament by the Honourable J. E. Ogden, but its provisions did not find favour. The Tasmanian Branch of the British Medical Association protested on several occasions against the abuse of the hospitals, and on February 13, 1917, after full discussion, a resolution was passed by the Branch to the following effect:—

That, inasmuch as the Premier has refused to give the British Medical Association (Tasmanian Branch) a definite assurance that rich and well-to-do patients will not be admitted into State-aided hospitals, the Association has decided, unless the assurance is given by the Premier by March 1, 1917, that such abuse shall cease, to instruct all its members to resign forthwith from the honorary staffs of such hospitals.

This resolution was forwarded to the Premier on February 15, 1917, and on March 17 a non-committal reply was received from the Premier, to the effect that, pending further consideration, he did not propose to make any alteration in the existing conditions. The honorary medical officers of the hospitals approved of the action of the Branch, and forwarded their resignations to the Honorary Secretary. The resignations were sent to the secretaries of the hospital boards on April 14, 1917. Three days before a conference was held between the Premier and delegates of the Tasmanian Branch, together with representatives of the Hobart General Hospital. The representatives of the Launceston General Hospital did not attend. This conference proved futile. The members of the honorary medical staff informed the Board of Management of the Hobart General Hospital that they would be prepared to attend the sick poor in the Hospital until other arrangements were made. Notwithstanding this intimation, these practitioners were told, when they attended at the Hospital to treat poor patients, that their resignations had closed the doors of the institution to them. In April the Board appointed Victor Richard Rattan Surgeon-Superintendent of the Hospital, Drs. E. T. Macgowan and E. W. J. Ireland members of the visiting staff and Dr. E. L. Crowther anaesthetist. Dr. W. G. C. Clarke, an American graduate, was also appointed to the staff. These practitioners were offered salaries, and their acceptance of the positions was thus not only in opposition to the resolution of the Tasmanian Branch of the British Medical Association, but was also in defiance of the resolutions of the Australasian Medical

Congress. It must be pointed out that Drs. Ireland, Macgowan and Crowther were members of the British Medical Association. Had they held the view that the action of the Branch was not in the public interest they could have protested against it at the meeting of the Branch on February 13, 1917. The Branch would have been justified had it moved for the expulsion of these members from the Association, on the ground that their acceptance of the positions was carried out in defiance of the declared policy of the Branch. This step was not taken, and the three members were allowed to resign their membership.

A considerable amount of bitter feeling has been exhibited in consequence of the action of the Tasmanian Branch. The politicians and a section of the public press attempted to show that the medical profession had jeopardized the welfare of the sick poor by its action. The action of the medical profession was taken with the object of safeguarding the interests of the sick poor and of preventing the hospitals from being exploited by those who were in a position to obtain their medical attendance in other ways. In the month of October, 1917, the Chief Secretary introduced a new *Hospitals Bill*, framed in accordance with the policy of the Government that there should be no differentiation between persons seeking medical aid in a State-aided hospital. We have repeatedly pointed out that the position is illogical. Public hospitals must be regarded as institutions for the benefit of those who cannot afford to pay for medical attendance outside. The Government proposes to place the rich man in the same ward as the poor man, and to charge for attendance as well as for maintenance. The fees for the medical attendance would not go to the medical officer carrying out the treatment, but to the institution. In the special circumstances of the two cities of Tasmania, it might be necessary to make a concession concerning the admission of paying patients to a private annex, where they could be attended by a medical practitioner of their own choice, but the accommodation in the public hospital itself must be reserved primarily for the sick poor, and they should have the first consideration at all times. The Government, in the *Hospitals Bill*, proposed to perpetuate the system of a Surgeon-Superintendent. This means that the Government claimed the right to provide facilities for one man to acquire technical skill at the expense of the remainder of the medical profession, and thus of the public. The Bill passed through the three stages in the lower House, and was then sent to the Legislative Council.

It is unnecessary to recite the various events which took place in the early part of this year. None of the endeavours to find a solution of the problem were productive of good. In June the Premier announced his intention to amend the *Medical Act, 1908*, with the object of enlarging the field from which the medical profession in Tasmania might be recruited. This matter was intimately connected with the question of the staffing of the hospitals. The attention of the Medical Council had been directed to the question whether the diploma on which Victor Richard Rattan had been registered in the year 1907 was actually registerable. When the Bill was presented it became obvious that the amendment of the law was proposed in order to legalize the registration. About that time the Tasmanian Branch, acting on information received from authoritative sources in America, challenged the validity of the documents presented by Rattan to the Medical Council in 1907. We have no desire to comment on this matter at present, as it is *sub judice*. The position of Rattan on the staff of the Hobart General Hospital, however, is so intimately connected with the differences between the Government and the Tasmanian Branch of the British Medical Association that no account would be accurate without a passing reference to the charge and to the appointment of a Royal Commission to investigate the charge. On October 2, 1918, two members of the Legislative Council, the Honourable G. T. Collins and the Honourable F. P. Hart, asked for an adjournment of the committee stage, because they thought that the differences could be adjusted. The Editor of *The Medical Journal of Australia* undertook at the invitation of the Council of the Tasmanian Branch to assist in bringing the parties to the dispute together. Several prolonged interviews with the Premier and the Honorary Minister took place, and there were indications that a settlement might be effected, if both the Government and the Tasmanian Branch of the British Medical Association would attend a conference in a friendly and conciliatory spirit.

The insuperable difficulty to a settlement was the present staff. The Government had entered into agreements with five medical practitioners who had defied the resolution of the representative organization of the medical profession, passed unanimously at a general meeting. It was quite obvious that the Branch could not be asked to overlook this grave breach of medical ethics on the part of the former members of the Association, nor to recognize the other members, whose conduct had rendered them ineligible for membership of the Association. The Editor pointed this out to the two Ministers, and expressed the opinion that no concessions and no spirit of conciliation on the part of the profession would have any effect as long as these insuperable obstacles stood in the way. The Honorary Minister, in a conversation, unofficially suggested that, since it was held that a conference would be useless while these five practitioners held office, a preliminary condition to the proposed conference should be that the Government should undertake to remove them from their offices. It was held that it would be dishonourable to convene a conference on any other terms. Dr. E. Brettingham Moore, the Honorary Secretary of the Tasmanian Branch, therefore addressed the following letter to the Premier on October 9, 1918:—

It has been brought to the notice of my Council that the consideration of the Hospitals Bill in the Legislative Council has been postponed for the purpose of an attempt being made to overcome the difficulties at issue. In these circumstances my Council would be prepared to discuss the several points set out below with you, provided that the Government undertakes to arrange for the removal from the hospitals at Hobart and Launceston of those medical officers who have been appointed since April, 1917, and the exclusion of these gentlemen from these hospitals in future.

The points for discussion would be:—

- (i.) The admission of all and sundry to the city public hospitals.
- (ii.) The admission of all and sundry to the country public hospitals.
- (iii.) The position of the salaried medical officers.
- (iv.) The position of the honorary medical officers.
- (v.) The method of selection and election of medical officers.
- (vi.) The representation of the medical profession on the hospital boards.

My Council would be prepared to instruct representatives to meet you and other members of the Government at any time convenient to yourself.

Yours faithfully,

E. BRETTINGHAM MOORE,
Honorary Secretary.

On October 10 the Premier addressed the following reply to the Honorary Secretary of the Branch:—

I have to acknowledge receipt of your letter of the 9th inst., in which you state that your Association is prepared to discuss the several points of difference between your Association and my Government with me, provided that the Government undertakes to arrange for the removal from the hospitals at Hobart and Launceston of those medical officers who have been appointed since April, 1917, and the exclusion of these gentlemen from these hospitals in the future.

Whilst anxious to have the differences referred to settled, I am surprised and regret that your Association has seen fit to attach such an extraordinary condition to the holding of a conference. It means that I am asked to remove those gentlemen who stood by my Government in a most difficult crisis and to exclude them from the hospitals for all time.

This I cannot agree to do. It simply means, before your Association will meet me in conference, I am asked to sacrifice those medical gentlemen, because they had the temerity to come to the aid of my Government and incidentally to the aid of the public, in defiance of your Association. I therefore regret that the laying down of such conditions by your Association makes the holding of the proposed conference impossible.

Yours faithfully,

W. H. LEE,
Premier and Chief Secretary.

A further attempt was made to find a solution of the difficulty. The Premier was asked to postpone the consideration of the *Hospitals Bill* pending the finding of the Royal Commission which was to enquire into the validity of the diploma on which Victor Richard Rattan had obtained his registration. The Premier had previously agreed to postpone the consideration of the *Medical Act Amendment Bill*. This request was refused, and this refusal closed the door to all further endeavours to give the hospitals the advantages of the willing services of the medical profession in the two cities.

On October 29, 1918, the committee stage of the Bill was resumed, and the letters referred to above were read by the Attorney-General. The Honourable G. T. Collins stated, in the course of a short speech, that if the condition to the conference were agreed to, the hospitals would have to be closed at once and kept closed until they obtained the services of fresh medical officers from other parts of the world. This is not the case. Had the Government found it possible and expedient to request the five practitioners to relinquish their positions, the former medical officers would have stepped into the breach at once, to act temporarily until fresh appointments could have been made. Moreover, the Branch would have been satisfied with an undertaking from the Premier, and would have proceeded to the conference, on the understanding that the resignations of the present medical officers would be effected after an agreement had been reached. The Government may feel that they cannot break with the men who accepted salaried positions at the hospitals at their bidding at a time when the whole medical profession in Tasmania was determined to stand up for the rights of the sick poor and for the rights of the profession. This feeling is no justification for the taunt that the proposal is extraordinary. It would have been rank hypocrisy to have entered into negotiations without admitting the fact that the five medical officers stood between the Government and the Tasmanian Branch of the British Medical Association.

On October 31 the Honorary Minister dealt in the Legislative Council with the statement that the suggestion that the removal of the medical officers should be a condition precedent to the holding of a conference emanated from him. Want of space renders it necessary to postpone until our next issue the publication of a résumé of his remarks and certain rejoinders.

On October 22, 1918, the Chief Secretary announced in the South Australian House of Assembly that the Government had decided to appoint a departmental committee to enquire into affairs at the Parkside Mental Hospital and into the unprecedented number of enquiries made by the Coroner. His Honour Samuel James Mitchell, S.M., Commissioner of Insolvency, has been appointed Chairman, and the other members are Mr. William Green Coombs, J.P., Chairman of the Adelaide Hospital Board, and Mr. Harry Dickson Gell, S.M., of Glenelg.

WELCOME TO SURGEON-GENERAL SIR NEVILLE R. HOWSE, V.C., K.C.B., DIRECTOR-GENERAL OF MEDICAL SERVICES, AUSTRALIAN IMPERIAL FORCE, AND TO SURGEON-GENERAL R. H. J. FETHERSTON, DIRECTOR-GENERAL OF MEDICAL SERVICES.

The Council of the Victorian Branch has instructed Drs. J. W. Dunbar Hooper and J. Ramsay Webb to arrange for a dinner of welcome to be given by returned men to Sir Neville Howse and General Fetherston on their return to Australia. Both officers are expected to arrive during the second week in November.

It is proposed to entertain Sir Neville Howse in Sydney. A dinner will be given by Army medical officers who have been on active service. Those medical officers who wish to take part in the entertainment, are requested to forward their names, rank and distinctions to Colonel R. E. Roth, C.M.G., D.S.O., No. 1 Tusculum Street, Pott's Point, or to Colonel T. M. Martin, C.M.G., Union Bank Chambers, Oxford Street, Sydney. The time and place of the dinner will be announced later.

Abstracts from Current Medical Literature.

THERAPEUTICS.

(153) Antiserum for Epididymitis.

R. A. Brown discusses the treatment of acute gonorrhoeal epididymitis with anti-diphtheritic serum, and records the results obtained in a series of fifty patients treated in the Royal Naval Hospital, South Queensferry (*Journ. Roy. Nav. Med. Service*, January, 1918). For the purpose of this series the author selected patients suffering from epididymitis in whom the testicle was enlarged, painful and exceedingly tender, with the scrotal skin tense. There was little urethral discharge, while fever was present as a rule. In a few instances the epididymis was affected on both sides. The usual palliative and local treatment was not employed, so as to render it more easy to come to a conclusion as to the effect of the serum. Upon admission the patient was well purged and was given large quantities of alkaline water and of barley water to drink. On the day of admission or on the following day 4,000 units of anti-diphtheritic serum were injected under the skin of the abdomen. The injection was repeated in twenty-four hours, and was given again at intervals of twenty-four hours until as much as 16,000 units or 20,000 units had been administered. The effect of the injection of the serum was an amelioration of the acute local symptoms within twenty-four hours. On the night following the injection the patients were often restless, but next morning they would spontaneously report that the pain was less and the tenderness not so marked. Not infrequently the febrile disturbance was increased by the serum. On the second and third days after the first injection the discharge became more profuse, and an abatement of the local symptoms set in, the swelling of the testicle becoming reduced in size. By the fifth or sixth day the signs and symptoms of epididymitis had disappeared in some patients. In more resistant cases the pain, tenderness and swelling remained noticeable until the end of the seventh day. Out of a series of fifty cases only one patient proved refractory. Some histories are given of the course of the disease in individual patients. The author points out that conclusions may be drawn from this series, since the cases treated were selected, so that they were similar in showing swelling, redness, pain and tenderness on one or both sides of the body. Patients with rheumatic or other complications were excluded from the series. In addition, the method of treatment was uniform. Finally, the results of the treatment were uniform, with one exception. This complication of gonorrhoea had practically ceased as a complaint within a period varying from five to eight days after the first injection. The efficacy of this treatment is apparent when it is

noted that the patient with acute epididymitis treated with palliative measures did not attain a similar freedom from the complaint until the end of three weeks and frequently not before six weeks. The advantages of the method are manifested in the ameliorating influence on the clamant symptoms and in the curtailment of the duration of the complication. The advantages accruing from a reduction in the period of acute inflammation are that the patients can return to duty in a shorter period, that there is a limitation of the possibility of extension of the infection to joints or other organs and that there is a diminution in the likelihood of subsequent sterility.

(154) Prophylaxis Against Pneumococci.

Russell L. Cecil and J. Harold Austin give an account of the results of prophylactic inoculation against pneumococcal infection in 12,519 men in Camp Upton, New York (*Journ. Exper. Medicine*, July, 1918). The success of prophylactic vaccination against typhoid fever, as demonstrated by the figures obtained in the United States Army, suggested to the authors the attempt to combat other prevalent and serious diseases by the same method. During the winter of 1917-18 pneumonia had been responsible for 80% of the deaths in the various training camps in the United States. While the streptococcus had been the morbid agent in some cases, the pneumococcus had occasioned much pneumonia. Experiments upon animals have shown that it is easy to produce an active immunity against pneumococci by the injection of small doses of dead germs into animals as susceptible as the mouse and rabbit. This immunity persists for some months. It is therefore theoretically possible to immunize men to the fixed types of pneumococci by the injection of dead cultures. Some preliminary investigations were carried out upon forty-two persons vaccinated against the pneumococci of the types I, II, and III. A definite immune response could be demonstrated to types I and II in the sera of the patients vaccinated. Little evidence of any response to vaccination with type III could be demonstrated. Less significance is attached to this fact, since it is difficult to secure the formation of antibodies against type III in animals. The amount of resistance produced by vaccination seems to depend on the total dose of each type of pneumococcus administered. While some response was elicited by 2,500,000,000 cocci of each type, more constant results followed the injection of 13,000,000,000 cocci. When the vaccine was given subcutaneously, the manner in which the total dose was divided, whether into a single dose or into seven daily doses, or into three to five doses at three to seven days' interval, seemed to have little influence upon the degree of immunity developed, provided the total dosage was the same. The local and general toxic reaction varied greatly in different individuals. The less the individual doses, the fewer were the severe reactions. It would thus ap-

pear desirable to divide the total doses into as many inoculations as circumstances make practicable. At Camp Upton, 12,519 men were vaccinated. Three or four doses were given at intervals of five or seven days, with a total dosage of 6,000,000,000 or 9,000,000,000 each of types I and II, and a slightly less number of type III. During the ten weeks that followed the vaccination, no cases of pneumonia of these three types occurred among the men who had received two or more injections of vaccine. In a control of approximately 20,000 men there were twenty-six cases of pneumonia due to pneumococci, types I, II, and III. The authors conclude that the prophylactic vaccination against pneumococcal infections of types I, II, and III is practical, and gives protection against pneumonia produced by these types of microbe. So far, observations have not been made to determine how long the immunity persists.

(155) Dilatation of Blood-Vessels by Adrenalin.

F. A. Hartman and L. McPhedran have made some observations on the vaso-dilatation of blood-vessels produced by small doses of adrenalin (*Amer. Journ. Physiology*, May, 1917). Quite small doses of adrenalin injected intravenously produce a fall in general blood pressure, which is not brought about by dilatation in the vessels of all parts of the body alike. Dilatation of the blood-vessels of the intestines is brought about by doses which are materially less than those necessary to raise the general blood pressure. This dilatation is under the control of the central nervous system, and is prevented by severing the nervous connexion with the central nervous system. An intestinal loop with nerves intact, but with circulatory connexion, will dilate when the appropriate amount of adrenalin is injected into the general circulation. Afferent impulses, such as result from the application of cold or from mechanical stimulation of the muscle of a limb, may impair or may inhibit the dilator reaction to adrenalin. A similar dilator effect can be obtained in perfused limbs. In the majority of cases it is only possible to produce a constrictor effect upon the blood-vessels of the spleen.

(156) Diuresis in Toxic Poisoning.

W. D. Sansum has studied the influence of histolavage or forced diuresis upon the excretion of the diphtheritic toxin (*Journ. Amer. Med. Association*, March, 1918). A diphtheritic toxin was used, of which 0.021 c.cm. per kilo. body weight killed four out of five dogs in four days. The toxin was given intravenously, well diluted with physiological saline solution. The diuretics that were tried, included an alkaline hypertonic salt solution, an 18% aqueous solution of glucose and an 18% solution of glucose made in Ringer's solution. Abundant water was given by the mouth to preserve the water balance of the dogs. It was found that diuresis had the effect of shortening

the lives of the dogs. With a lethal dose the dogs only lived two days. The author concludes from these negative results that attempts to apply an identical procedure to human clinical practice should be discouraged.

UROLOGY.

(157) Bilateral Occlusion of the Ureters.

Ellis Fischel (*Urolog. and Cutan. Review*, August, 1918) records two cases of complete occlusion of both ureters. In the first case the patient was a married woman, aged 39 years, who sought relief on account of irregular vaginal bleeding. It was found that she had a large carcinomatous mass arising from the uterus, filling the vault. This mass was treated by deep cauterization. Nine days after the operation the amount of urine voided decreased, and on the following day there was complete anuria. Cystoscopic examination revealed an empty, normal bladder, with normal ureteral orifices. A ureteral catheter met with an obstacle 2 cm. from each orifice. Nephrotomy was performed as soon as it was determined that the obstruction could not be overcome. The patient recovered from the urgent symptoms, but died of cachexia three months later. The second patient was a man, who complained of pain in the left flank. He had not voided urine for 36 hours. The bladder capacity was 120 c.cm., and the organ was affected with a chronic diffuse cystitis. Ureteral catheters met with impassable obstructions 15 cm. and 2 cm. from the orifices. Nephrotomy was performed, and the patient made a satisfactory recovery. It transpired during the post-operation stage that the right kidney was badly infected and a large tumour was found in the right hypochondrium, and subsequently the mass proved to be an abscess, which was evacuated through the right nephrotomy wound. No calculi were found. The possibility of a gonorrhoeal or syphilitic origin of the renal affection and of the ureteral obstruction was excluded. In discussing the subject of bilateral obstruction of the ureter the author finds that the diagnosis of partial obstruction must be accepted with reserve. This condition may be congenital or acquired. Eisendrath has given an excellent description of the congenital forms. The acquired forms may depend on extrinsic or intrinsic causes. Among the former are: compression by neoplasms, inclusion in ligatures during pelvic operations, trauma to peri-ureteral tissues, parametric infection and pregnancy. The intrinsic causes are: inflammation, impacted calculi, hypertrophy of the bladder, multiple cysts of the ureteral wall and primary carcinoma of the ureter. He gives a short account of the recorded cases of each of these forms. The diagnosis is made by the discovery of an impassable obstruction to the passage of the catheter, associated with the cessation of the flow of urine into the bladder. A short description of the prognosis and treatment is also given.

(158) Paralytic Ileus Following Supra-Pubic Cystotomy.

Herman L. Kretschmer records a very rare case of paralytic intestinal obstruction following a supra-pubic cystotomy, performed for the relief of symptoms due to an inoperable papillary carcinoma of the bladder (*Urolog. and Cutan. Review*, July, 1918). While paralytic ileus is not uncommon after intra-peritoneal operations, there are very few recorded cases in which this resulted from a bladder operation. The patient had noted hæmaturia for six months. The blood was passed after each voiding. Increased frequency of micturition occurred after four months, and had become very severe. There was great pain and tenderness in the bladder area. The patient was thin and pale. The prostate was slightly enlarged and very tender. The bladder contained an extensive mass of papillary carcinoma, involving the posterior wall. In parts there was necrosis. Supra-pubic cystotomy was performed in the usual manner, and a large drainage tube inserted after the peritoneal fold had been pushed back by means of a gauze pad. The patient had much gastric distress after the operation, and abdominal distension and vomiting set in. His condition was too critical to admit of a laparotomy. At the post mortem examination the intestines were found to be distended with gas, and the gall bladder was also distended. There were no signs of peritonitis. No mechanical cause of the ileus was discovered.

(159) Syphilis of the Bladder.

A review of the literature reveals that syphilis of the bladder is commoner than authors admit. A large number of authentic cases have been recorded. The clinical symptoms, according to F. H. Cole (*Urolog. and Cutan. Review*, August, 1918), are first hæmaturia. The possibility of a syphilitic lesion of the bladder should be kept in mind in every case of hæmaturia. While gumatous lesions may give rise to bleeding throughout the whole act of micturition, syphilitic ulcers usually produce a terminal hæmaturia. Pain may be very acute, especially when the neck of the bladder is involved. It is often difficult to differentiate a papilloma from a vesical gumma. It is said that syphilitic ulcers are usually placed higher up in the bladder than are tuberculous ulcers. The diagnosis can be made in the presence of the following signs and symptoms: pain, hæmorrhage and pyuria, with slight changes in the urine. The character of the vesical lesion is taken into account, and the Wassermann reaction must be employed. The author considers that the response to antisyphilitic remedies is of great diagnostic importance. He gives the details of a case of a woman, aged 34 years, who had been infected twelve years before. She had had bladder symptoms for six years. These were pain during micturition and increased frequency. After an attack of partial retention, she had hæmaturia. The bladder was infected with *bacillus coli* com-

munis. The Wassermann reaction was markedly positive. The patient improved rapidly on being treated with salvarsan and mercury injections. An ulcer near the orifice of the ureter with indurated edges healed up, and was replaced by a white scar. A smaller ulcer healed without any trace.

(160) Urinary Frequency.

E. L. Young deals with the symptom of increased frequency of micturition, which he ascribes to either the remnant of some inflammatory condition of the urethra, bladder or kidneys, or to a primary congestion of the trigone or urethra from conditions outside the bladder wall (*Urolog. and Cutan. Review*, May, 1918). In some cases the symptom is caused by a faulty posture. He cites one case of a young woman who had suffered for the greater part of her life. Nothing abnormal was discovered during an exhaustive examination. It was found that she had an abnormal lordosis, and that the increased frequency and backache disappeared completely as soon as a proper brace was worn and suitable exercises were carried out. The increased frequency may occur as a post-operative congestion in women, or in association with any pelvic condition leading to congestion. It is met with in young men and girls of an emotional, neurotic nature, and in elderly women. The treatment consists in the removal of the cause, if possible. In nervous cases plenty of water should be drunk and sandal wood oil prescribed. Dilatation of the urethra and application of silver nitrate in strong solution are necessary in obstinate cases. When the condition is largely trigonal the silver nitrate solution should be applied directly to the trigone. A guarded prognosis should be given in the majority of cases.

(161) Renal and Urethral Calculi.

J. S. Derr (*Urolog. and Cutan. Review*, May, 1918) claims, on the basis of a long experience, that renal and urethral calculi can be diagnosed with practical certainty by means of Röntgen rays. After dealing with the various points in the technical application of the method, he enumerates the conditions that may be demonstrated on the skiagram. In the first place, the position, size and shape of the kidney is seen, and the absence of one organ may be determined. Atrophy or hypertrophy can be distinguished by a comparison with the other organ. Dense abdominal adhesions may blur the outline of the kidney. A pyelogram will determine the size and shape of the renal pelvis and calices, and may discover kinks or other abnormalities in the ureters. By means of an opaque urethral catheter the shadow of a phlebolith in one of the iliac veins can be distinguished from that of the urethral calculus. He finds that calcium oxalate calculi yield the best shadows, that phosphatic calculi yield the next best, and that uric acid and urate calculi are the least easy to see. Calculi of pure uric acid, however, are extremely rare.

British Medical Association News.

SCIENTIFIC.

A meeting of the New South Wales Branch was held at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, on September 27, 1918, Dr. A. A. Palmer, the President, in the chair.

Dr. R. Worrall read a paper on "Some Common Mistakes in Midwifery Practice" (see page 386).

Dr. S. H. MacCulloch said that he had listened with great pleasure to Dr. Worrall's excellent paper. He considered that Dr. Worrall had let the general practitioner off very lightly. He was in entire agreement with Dr. Worrall in regard to the methods of examination before labour. Prematernity examination was rarely carried out, and even when it was carried out it was usually perfunctory. He urged obstetricians to make a systematic examination, employing inspection, palpation, percussion and auscultation. His experience led him to the conclusion that there was one condition which was difficult to find out, and that this often led to dystocia. This was an alteration of the ordinary inclination of the pelvis. It was a cause of the nipping of the anterior lip of the cervix and consequent delay of extension. Turning to the question of interference in protracted gestation, he held the opinion that the practitioner should hold his hand. He discussed the alleged normal duration of pregnancy, and contended that 270 days could not be accepted as a definite standard from which there could be no variation. He had attended many women who, it was supposed, had over-carried, and yet there had been a normal labour and a normal child. There were several authentic records of over-carrying, he admitted, but he thought that it was better to leave nature alone, unless there was a definite indication for interference.

He asserted that the greatest mistake that was made in the management of labour was the failure to examine the patient thoroughly at the beginning of the second stage. He considered that bimanual examination, aided by external examination, should disclose to the practitioner the presentation, the position and the lie of the foetus. No practitioner should be satisfied until he was fully aware of all the facts.

In the next place, he held that the danger associated with the insertion of the hand into the uterus was a bogie. No one should examine oftener than was necessary, but there was no need to be afraid. In the treatment of hæmorrhage, if the practitioner cleaned the patient's passages as well as he cleaned his own hands, he could almost guarantee her safety.

He regarded the idea of charting the height of the fundus an excellent one, but he called attention to the fact that violent sepsis at times co-existed with a fully involuted uterus. When there was a sudden suppression of the lochia after the fundus had dropped down, the patient was in a precarious position. He took grave exception to Dr. Worrall's advocacy of Bozzi's dilator. This instrument was most dangerous, and should be discarded. Even if used under the control of the watch, it was not safe. He held that the best dilator was the human hand. When dilation could not be effected with the hand vaginal Cæsarean section should be performed. Similarly, the finger was the best curette. In conclusion, he summarized the Edinburgh teaching of the management of the third stage in the following words: "Wait, watch and pray lest you enter into temptation."

Dr. W. T. Chenhall endorsed Dr. Worrall's views concerning fees for obstetric work. Dr. Worrall had been a pioneer and general good had accrued as the result of increased fees. Obstetric work was the hardest and most exhausting in medicine, and it was the worst remunerated.

He held the view, in connexion with the suggestion of inducing labour at full term, that, as long as the foetus was in the uterus and the membranes intact, both the baby and the mother were safe. When rupture of the membranes took place, the obstetrician should be in constant attendance. He agreed with Dr. MacCulloch that the obstetrician should know all about the passages and the passenger at the beginning of the journey. A thorough examination was quite essential. He also agreed with Dr. Worrall that intervention should not be undertaken until the os was fully dilated. In the next place, he spoke a few words concerning the repair of lacerations of the cervix or perineum. The lacerations in themselves were excusable, but neglect to repair them was

not. When there was hæmorrhage the obstetrician, if he were a wise man, would not go home until he had determined whether the cervix had been torn or not. Hæmorrhage due to laceration of the cervix could be controlled at once by the insertion of properly adjusted sutures. In the case of a complete perineal rupture, extending into the rectum, he held, in opposition to Dr. Worrall's views, that it was advisable to wait until adequate assistance could be obtained before a deliberate attempt was made to repair the defect. In adjusting the sutures, he had found it advisable to wind the silk-worm gut twice or three times, to pull it tightly and to secure it with forceps without any knot.

Dr. L. W. Bickle referred to a method of prevention of tears of the perineum. The perineum was lubricated with balsam of Peru and vaseline, especially when the perineum began to stretch. He claimed that this simple procedure usually sufficed to prevent a tear taking place.

Dr. E. Ludowici said that he always made a vaginal examination, if necessary, under an anæsthetic, in the early part of the second stage and in the first stage, if this was unduly protracted. He had found that the free use of some soapy cresol preparation sufficed to ensure a satisfactory cleansing of the patient's genital passages and of the obstetrician's hands. The examination should be thorough and should enable the obstetrician to make up his mind in regard to all the circumstances. He also advocated douching before and after examining and all forms of intervention. Applying the douche oneself was very different to ordering the nurse or midwife to carry it out.

Speaking to Dr. Worrall's teaching concerning the charting of the height of the fundus, Dr. Ludowici contended that nurses frequently became slack in filling in the data. He held that it was the practitioner's duty to keep himself and the nurse up to the mark.

He stated that he would not care to use a sharp curette on a puerperal uterus. At times it was necessary to use a blunt ring or oval curette, and to use it like a rake. The curettage should be followed by flushing. He always administered pituitrin when clearing out a puerperal uterus. The injection was best given into the deltoid muscle. The injection had the effect of toning up the uterus and thus of preventing hæmorrhage. The speaker, in concluding his remarks, stated that the proper place to learn midwifery was in the maternity hospital. It should not be learned by the student outside in the patient's home, at the expense of the patient's safety or comfort. He pleaded for improved instruction in obstetrics.

Dr. J. C. Windeyer supported Dr. Worrall's contention of the importance of pre-maternity examination and supervision. He had performed Cæsarean section more frequently for conditions that could have been treated in another way had the diagnosis been made beforehand than for conditions which would have necessitated this procedure in all circumstances. He instanced pregnancy complicated by pelvic tumours or by bands resulting from ventro-suspension. In the latter case an early examination would have revealed the cervix lying high up, over the *symphysis pubis*. A badly-performed ventro-suspension at times led to the fixation of the uterus by bands and to difficulties in parturition. Dr. Windeyer also dealt with faulty methods of plugging in hæmorrhage. He maintained that dry gauze should not be employed for vaginal plugging, and that much care should be exercised in the insertion of moist wool or gauze. In regard to vaginal examination during labour, he held that this should not be carried out in normal cases. The fear of prolapse of the cord was unfounded when the head was fixed in the pelvis, and it was therefore quite unnecessary to examine for the purpose of ascertaining whether this had occurred. The size of the cervix could be determined *per rectum*. It was, as a rule, inadvisable to introduce a finger or the hand into the vagina. On the other hand, he held that the finger was the safest curette for the infected uterus. He disapproved of instruments. He thought that Dr. Worrall must have been singularly lucky in his use of Bozzi's dilators, as well as very expert. He, the speaker, did not like Bozzi's instrument. If there was any difficulty in dilating the cervix, he preferred to perform a vaginal Cæsarean section. He had been surprised that Dr. Worrall had not spoken of the advisability of stitching up the rectal wall in cases of complete perineal rupture before inserting the other sutures. He liked to use catgut, reserving silk-worm gut for the re-inforcing sutures. In dealing with the charting of the fundal height, he, too,

was not prepared to accept this as an absolute means of discovering septic conditions. Sub-involution was not always present in the virulent types of sepsis. As a rule, when the fundus rose during the puerperium, it was an indication that there was something to remove. When sepsis occurred and the fundus did not rise, the obstetrician had something much more serious to deal with.

Dr. R. E. Woolnough thought that one of the greatest difficulties the practitioner had to deal with in midwifery practice was that of treating the friends of the patient. He felt sure that forceps were often applied merely to placate an anxious husband. He had found that perineal tears could be reduced in frequency if the forceps were removed before the head passed over the perineum. Dr. Worrall and other speakers had urged them to rely greatly on external examination. He admitted that he found it difficult to be quite sure of the parts palpated in this way.

Dr. F. H. Cox supposed that he had been exceptionally lucky. He had seen very little of the dreadful things that had been spoken of. Possibly the miner's wife was less liable to these complications than the city woman. He, like Dr. Woolnough, preferred to take the forceps off as the head descended on to the perineum. He also preferred to repair a lacerated perineum before the completion of the third stage. He did not believe in waiting for the delivery of the placenta. This practice might be regarded as quite unorthodox, but when the placenta was not born quickly he assisted it with a little squeeze and some pressure.

Dr. A. J. Gibson referred to the fact that in the early stages of pregnancy the uterus at times did not develop evenly. A bulging was often met with, suggestive of a tumour or an ectopic gestation. Delay in parturition was often associated with obliquity of the uterus. He condemned the practice of applying forceps before dilatation was complete. It was not uncommon. Even when the os was fully opened, it was at times too soon to put on the forceps. Laceration took place if the instruments were employed in this way. Referring to the repair of the perineum, he found that the after-treatment was often neglected, and that sepsis arose from want of care.

Dr. H. H. Schlink spoke of his experience of pregnancy complicated by gonorrhoea. In many cases the type of infection was mild. In these cases much of the infected material would be swept out of the vagina by the placenta. He considered it inadvisable to examine vaginally in these gonorrhoeal cases. He criticized Dr. Worrall's method of measurement of the fundal height. The umbilicus, like other landmarks on the integument, was not to be relied on. Accurate scientific measurements must have relation to lines drawn from bone to bone. In suturing the perineum after complete rupture, he thought that suture should take in the rectal mucosa. He objected to vaginal examinations in all normal cases, but held that it was necessary in cases of delayed third stage. He instanced one case in which he had waited for two and a half hours and then had found that there was fibrosis of the placenta. He advocated the use of X-ray examination to supplement external examination. By this means accurate information could be obtained, especially if two pictures in different planes were taken.

Dr. Constance D'Arcy spoke of the induction of labour in cases when no uterine contractions occurred after the membranes had ruptured. She recited the chief details of two cases in which a fortnight elapsed after spontaneous rupture of the membranes before labour began. She suggested that the patients should be put to bed, and if no pains came on in 24 hours labour should be induced. She had employed the Champetier de Ribes' bag and manual methods for the purpose of dilating the cervix, but would not use Bozzi's dilator. She was very sorry that Dr. Worrall had advocated the method. It often led to catastrophe. In regard to the delivery of the placenta, she stated that the introduction of the hand was undoubtedly associated with risk. She found that there was no excessive risk in performing Cæsarean section after an endeavour had been made without avail to deal with the condition by other means.

Dr. Gibbs thought the danger of introducing the hand into the uterus was less than that of leaving portions of placenta in the organ.

Dr. J. Morton pointed out in connexion with the diagnosis of presentation and position by external palpation that in

occipito-posterior presentations it was not the presentation that mattered; the important point to be determined was its persistence. This could only be ascertained by vaginal examination. The treatment of this condition, he held, should be conducted under deep anaesthesia. He did not agree with Dr. Chenhall that the cervix should be repaired immediately after delivery. At this stage it was like a jelly. In his opinion, there were two great factors underlying the question of sepsis. It was of no moment how many germs were carried into the uterus, provided that there was no dead material on which they could feed. In the next place, it was of importance to deal with sepsis from the start. He thought that the most serious cases were those in which the sepsis was derived from previous cases of erysipelas and the like.

Dr. T. W. Lipscomb raised the question whether Dr. Ludowicz was justified in assuming that the vagina could be disinfected by douching. He asked Dr. Worrall why he advocated an examination three weeks after delivery.

Dr. P. L. Hipsley thought that many of the mistakes made in midwifery were due to the busy practitioner being in too great a hurry. He thought that it was often helpful, when called before dilatation was complete, to give chloroform and to leave the house. He found that gloves had great disadvantages, and gave a sense of false security, and had arrived at the conclusion that it was better to do without them and make few or no examinations than to make too many examinations with gloves on. There was a real difficulty in removing pieces of placenta when the hands were gloved. He had found that the method of suturing an extensively lacerated perineum as described by Dr. Worrall was highly satisfactory. He gave pituitrin in the third stage of labour and found that, after its exhibition, it was quite easy to express the placenta intact.

Dr. Worrall, in his reply, expressed his gratitude to the various speakers for a very interesting and instructive discussion. He re-stated his contentions that good midwifery practice was incompatible with inadequate remuneration. A minimum fee was essential, and the patient should be informed from the first exactly how many visits the fee would cover. All prematernity work should be paid for. He had found that when the importance of this was pointed out to the patients they readily agreed to pay reasonable fees. He hoped that the New South Wales Branch would consider the question.

In regard to the remarks of some of the speakers, he stated that he had made it clear in his paper that he advocated inserting the hand into the uterus to remove the placenta if necessary, but he maintained that it would not often be necessary, if sufficient time were allowed and premature attempts to express violently were avoided. The hand was undoubtedly the best instrument for removing the placenta when adherent, but he held strongly that in sapraemic conditions the curette was far superior. The curette inflicted less traumatism and needed, as a rule, no anaesthetic. It should be sharp, not cutting, and should be used with a light, raking movement. It was rarely indicated before the seventh day, and was strongly contraindicated in septic infection, as distinguished from septic intoxication or sapraemia. A history of trouble in the third stage, profuse and odorous discharge and the discovery that the fundus lay midway between the umbilicus and the pubes, or about 7 to 8 cm. from the pubes, all favoured the diagnosis of sapraemia. After the curettage and flushing out with sterile hot boric acid lotion, it was a good plan to boil a large breakfast cup and to use it as a receptacle for a large iodoform gauze bandage, which was then thoroughly soaked in tincture of iodine and carried through the speculum to one cornu of the uterus, then to the fundus and then to the other cornu. The aim was to bring the gauze soaked in iodine into contact with every part of the interior of the uterus. The packing was removed after 24 hours.

He agreed that Bozzi's dilator, especially before the cervix had been taken up, was a dangerous method of treatment, but so were many of the other means. In his practice it had been successful. If the patient were in a hospital, he would prefer to do vaginal or abdominal Cæsarean section, but in a private house he would use Bozzi's dilator, if the cervix were not very hard and unyielding.

In reply to Dr. Ludowicz, he said that a real pelvis, lined with leather, to resemble the natural state, and a real, full-

term foetus, preserved in formalin, were very useful for teaching students how to perform version and how to apply forceps. The mechanism of labour in the different presentations could also be learned in this way. He stated to Dr. Windeyer that he had never seen or heard of dystocia following the operation of ventro-suspension and shortening of the round ligament in any of his patients. Sepsis was usually responsible for any subsequent dystocia. He did not suture the rectal wall separately in complete rupture of the perineum. In his experience this was not necessary. He regarded Dr. Cox's views as revolutionary and could not agree with hasty methods in the third stage.

In reply to Dr. Schlink, he said that a large placenta was suspicious of syphilis. The relative weight of the placenta to the total weight of the foetus was said to be 1 to 5 in healthy children and 1 to 3 in syphilitics. He had had no experience of X-rays as a means of determining the foetal position. When the opportunity offered, gonorrhoea in pregnancy should be vigorously treated by weekly applications to the vagina and interior of the cervix as far as the inner os of a solution of one part of nitrate of silver in 30 parts of spirits of nitrous ether. He agreed with Dr. Morton that it was unwise to seek for cervical lacerations unless there was bleeding from that part. He thought that the statement that germs could be introduced into the uterus with impunity, provided there remained no dead tissue which they could invade, was revolutionary and highly dangerous. There was an open wound in the uterus.

In reply to Dr. Lipscomb, he stated that if he found retroversion at the examination on the twenty-first day he preferred daily massage of a few minutes' duration and placing the uterus in acute anteversion until the end of the sixth week. If this could not be carried out, he would consider the use of a pessary for that period justifiable, in order that the uterus might involute in the normal position. Finally, he told Dr. Hipsley that he had not found pituitary gland shorten the third stage. He thought that rubber gloves should always be used.

The following have been nominated for election as members of the New South Wales Branch:—

Campbell Roy Campling, M.B., Ch.M., 1918 (Univ. Sydney), "Glen Ugie," Denman Avenue, Haberfield.
Eugene Augustine Rogers, M.B., Ch.M., 1918 (Univ. Sydney), Cooper Street, Strathfield.

THE MCGARVIE SMITH VACCINE.

During the course of several months many references have been made in the public press to the negotiations which were conducted by the Government of New South Wales and its agents and the late Mr. McGarvie Smith, in regard to a protective vaccine against anthrax, which the late Mr. McGarvie Smith had manufactured during his lifetime. It was held that the vaccine was a valuable one for the purpose of protecting animals against the disease. Before his death, Mr. McGarvie Smith passed over to the New South Wales Government an institute for the manufacture of this vaccine, endowed by loan to the extent of £10,000, under deed of gift, and with it the secret formula for the preparation of the vaccine. After his death, the trustees of the late Mr. Gunn, a former associate of Mr. McGarvie Smith, handed over the formula of the Gunn anthrax vaccine. We are unaware whether or no this gift was also under a bond of secrecy. The question of the conditions under which the Government accepted the gift has been commented on very freely, both in Parliament and in the public press.

On October 29, 1918, the Honourable C. W. Oakes, member for Waverley, moved the adjournment of the Legislative Assembly for the purpose of discussing this matter. In the course of a long speech he stated that the Government had entered into negotiations for the possession of an anthrax vaccine as long ago as the time when Mr. Wade was in office. At a later date a Mr. Bull reported that Mr. McGarvie Smith was anxious to make the State of New South Wales and the pastoral industry a gift of his vaccine formula. From April 9, 1917, the Secretary for Lands had been in negotiation with Mr. McGarvie Smith, and on this date, at the Premier's request, a report was obtained from Mr. Bull con-

cerning his negotiations. Mr. Waddell and Mr. Ashton were consulted by the Secretary for Lands, and negotiations were thenceforward conducted by them, together with Mr. Bull and Mr. Valder. Apparently no progress was made until April, 1918. The Acting-Premier addressed a letter on April 11, 1918, to the Premier, on his return from England, stating that the Honourable T. Waddell, Mr. J. Bull and the Honourable F. E. Wall, M.D., had waited on him and stated that Mr. McGarvie Smith was prepared to hand over his formula to the Government on certain conditions. On April 22, 1918, Dr. Wall telephoned to the Premier that Mr. McGarvie Smith had communicated the formula to him, and that tests would have to be made by the experts of the Agricultural Department. It appears that Dr. Frank Tidswell's name was suggested to Dr. Wall as a microbiologist capable of undertaking the tests. The Premier sent a letter of warm appreciation and thanks to Mr. McGarvie Smith for communicating the formula to Dr. Wall. Mr. Oakes stated that that letter proved to him that Dr. Wall had been brought into the matter purely and simply as an agent of the Government of New South Wales. On the next day the Premier's Private Secretary prepared a memorandum to the effect that Dr. Wall desired the services of Dr. Tidswell for two months, at a salary of £10 10s. a day, and had asked for a reply on the same day. An agreement was drawn up between the Premier, Dr. Wall and Dr. Tidswell, under which the State was to give these two practitioners the necessary fees, i.e., £10 10s. a day each. The total amount of these fees would be £1,092. "Those two medical men would therefore receive £1,092 for simply testing whether the vaccine was according to the formula given to them. I am told by experts that a fee of 100 guineas would have been ample to secure the Government's rights to the formula." The actual amount paid to them was £1,294, the difference, Mr. Oakes presumed, being paid for materials supplied. In the next place, he referred to a letter from Mr. Holman, written on July 15, after the test had been completed, because he maintained that this letter showed that the Premier believed that the secret would go to the State, that Dr. Wall was acting as agent for the Government, and that he was to get the formula and give it to the Government.

Mr. Oakes dealt with the trustees of the McGarvie Smith Institute. The Government trustees were Messrs. Ashton, Hunt and Latimer. He wished to know whether they were nominated by the Government or by the Premier, or whether Mr. McGarvie Smith had suggested that they should have a seat on the trust on behalf of the Government. After the fees, amounting to £1,294, had been paid by the Government, the Government, he assumed, found itself up against a financial proposition. Somebody approached Mr. McGarvie Smith and told him that, before this thing could be properly launched there would have to be an endowment. The Government was not prepared to find any money for this purpose, and Mr. McGarvie Smith therefore endowed it with £10,000. The sum of £1,294 was paid out of this £10,000. On the realization of the securities there was a loss of £1,600, and he understood that the Government undertook to make good the shortage.

Mr. Oakes suggested that Dr. Wall got possession of the formula, but instead of handing it back to the Minister who entrusted him with his authority, consulted Dr. Tidswell. They finally refused to lodge it in the hands of those who entrusted them with the responsibility. The institute had been created under a deed, and Drs. Wall and Tidswell, together with the Chairman of the trust, took the attitude that the Government had no control whatever over the trust and no authority in any shape or form. He referred to a letter published by Mr. Waddell, in which the writer maintained that the Government had no power under the deed of trust to have a say in the management and control of the institute. When the Government began to see the importance of the matter, it approached the Government nominees, and Mr. James Ashton saw Drs. Wall and Tidswell about the position into which affairs had got. It was then proposed under the agreement to appoint these gentlemen, at a total salary of, he thought, £3,500 per annum for making the vaccine. In reply to an interjection, he agreed that they might not be getting that amount then, but he ventured to say that the alterations which had taken place in the arrangements had been brought about by the disclosures and the agitation which had taken place. Mr. Mutch intervened with the remark that they had to supply rooms and a staff for the

manufacture of the vaccine. Mr. Oakes retorted that Mr. McGarvie Smith, an old gentleman of 70, had been able to make all the vaccine he required in a few short hours per week "in a little bit of a place in Denison Street, Woollahra." Mr. Gunn, for 15 or 20 years, had carried out the formula on the same lines as Mr. McGarvie Smith, and had made all he wanted. He then referred to the offer of the Gunn trustees, through Mrs. Gunn, to the Minister for Agriculture to hand over the formula. The Department of Agriculture immediately negotiated with him, accepted the formula, and instructed the expert officers in the Department to make the tests necessary for the security of the Department. There was no question of paying £1,294 to test Mr. Gunn's formula; there was no question of engaging two experts at £3,500 per annum for the two to make the vaccine. He stated that, among the papers, there was a letter from Mr. Kidd, which showed that these gentlemen approached the institute for no less a sum than £2,000 a year each for ten years to make the vaccine. He maintained that their action was not in keeping with Mr. McGarvie Smith's spirit of generosity in handing the formula over. He claimed that the Government should make the McGarvie Smith Institute an institute where the pastoral interests might have representation, but an institute which should be absolutely controlled by the Government.

Since the legal formula had been handed to the Board of the Institute, Mr. Waddell, as Chairman of the Board, had taken up a close attitude on the subject. "It is a matter of common knowledge that certain gentlemen have their carpet bags packed, in order to take this vaccine to the Argentine and other countries and to make money out of it." The vaccine had been known ever since Pasteur had brought it prominently into notice in Paris. In reply to Mr. J. Storey, who interposed the remark: "Not the McGarvie Smith vaccine," Mr. Oakes contended that the vaccine was not a new thing, and quoted from a letter by Mr. John Stewart, the veterinary surgeon.

The Premier stated that the matter divided itself into two points. The first was whether there was any blame attaching to the Government for its conduct of the delicate and rather difficult responsibility which was somewhat unexpectedly thrust upon it by the action of the late Mr. McGarvie Smith, and the second was whether any blame attached to the medical men, one of whom had been engaged primarily as intermediary between the Government and Mr. McGarvie Smith, and both of whom were ultimately engaged by the Government in investigating the process itself. He was not particularly concerned at the moment with the second question. He believed that the medical men had acted with perfect propriety. This belief had been made stronger by some recent events. There was no doubt in the mind of the Ministers that when the negotiations between the Government and Mr. McGarvie Smith were taking place, any gift he would make would be a gift in terms to the Government of the State. The Government could not accept a formula without investigating it to ascertain its scientific and commercial value. He understood that the late Mr. McGarvie Smith was an eccentric man, subject to many influences, and when the time came to transmit his general intentions of bounty towards the State, his action took the form of signing a deed by which the formula was made over, not to the Government as a government, but to an institution, the constitution of which had been the subject of discussion between Mr. McGarvie Smith and the Minister for Agriculture. Mr. Holman then referred to the fact that the negotiations after a time were carried out between the solicitor of Mr. McGarvie Smith and the officers of the Crown Law Department. The personnel of the trustees was settled between the solicitor and the Crown Law authorities. The names of the seven gentlemen were agreed upon and were included in the document, which was sent to him for signature. He was bound to say that he signed the document without any clear knowledge of its contents. It was only when he examined the document several weeks later that he found that it did not convey the formula in terms to the Government, but to the institute. At that stage Mr. McGarvie Smith was in a state of extreme exhaustion. His death was imminent and his mind was failing. If there had not been a matter of great urgency the deed would have been considered in Cabinet. Any delay caused by difficulties raised in regard to details would have resulted in the whole thing having to be abandoned. He held that the McGarvie Smith discovery was of con-

siderable importance. They had to take from Mr. McGarvie Smith what he was prepared to give, and they were bound to allow the seven gentlemen whom they had jointly nominated to decide whether Dr. Wall and Dr. Tidswell should carry this thing on or not, unless it became an absolute scandal and legislative action became necessary. He stated that no government in the world would regard itself as bound—and they were not bound—to follow the trustees in regard to the methods to be observed for the preservation of the discovery. They were dealing with a piece of knowledge which must be preserved for the benefit of future generations. The further question arose whether such a piece of scientific knowledge ought not to be made public to the world. That was the point upon which the Government had not come to any conclusion. He understood that they had the rights in all the countries of the world.

Mr. J. Storey asked whether he concurred with the suggestion made by the honourable member for Waverley that his agent, Dr. Wall, was deputed by him to do a certain thing, and, having got the information, appropriated it to himself and Dr. Tidswell and would not give it up. Both Mr. Holman and Mr. Oakes denied that this suggestion had been made. There was no doubt that the mission upon which Dr. Wall first went to Mr. McGarvie Smith was to induce him to hand over the secret to the Government. Later on Dr. Wall was armed with a letter from him in the name of the Government for obtaining the formula for the Government. In the last few days of his life Mr. McGarvie Smith finally decided not to do this, but to give the formula to the institute. He had never heard it suggested that Dr. Wall had anything to gain or expect from such a change of view.

Mr. Holman pointed out that Dr. Tidswell did not come into the thing until they engaged him to investigate the scientific value of the formula. They were quite ready to engage Dr. Tidswell's services. Whatever was paid to Dr. Tidswell was paid out of the funds of the McGarvie Smith Institute. Mr. McGarvie Smith gave Dr. Wall as a deed of gift the rights outside Australia, and Dr. Wall re-transferred them to the State. A few days later Mr. McGarvie Smith made another deed of gift to Dr. Wall of all the foreign rights. Dr. Wall, imagining he was acting as agent for the Government, made a further deed of gift, in which he re-transferred those rights in foreign countries to the Government of the State or to the institute, he was not sure which. He, the Premier, held that, had Dr. Wall been disposed to stand on technicalities, he might have taken up the position that Mr. McGarvie Smith had given those rights to him for his own benefit.

Mr. T. D. Mutch, member for Botany, stated that it had apparently escaped the notice of the Premier that Dr. Wall did not, in the first instance, secure the secret from Mr. McGarvie Smith as an agent of the Government. The documents proved that Dr. Wall went to Mr. McGarvie Smith with Mr. Waddell and Mr. Bull. Throughout the negotiations and throughout all the documents it was apparent that Mr. McGarvie Smith would at no time divulge his secret to any officer of the Department of Agriculture or anybody connected with the public service. Mr. Mutch went on to deal with the endeavours of numerous persons to obtain from Mr. McGarvie Smith the secret of his formula. During the last series of negotiations, Mr. Waddell asked Mr. McGarvie Smith in the presence of Dr. Wall whether he would, in the interests of the pastoralists and of the pastoral industry of the State, reveal the secret, so that it could be kept safe after he had passed away. Dr. Wall informed him of this. He had the best possible reason for believing him (Dr. Wall), as he was a most exceptional man so far as honesty, public spirit and uprightness were concerned. They had gone to Mr. McGarvie Smith, but not at the Government's invitation. Attached to a letter from the Premier to Dr. Wall, dated July 8, 1918, was a statement by Mr. McGarvie Smith, witnessed by Mr. Bull. In the statement was the following passage:—

With regard to my discovery of matured spore anthrax vaccine, I desire to say that I have freely and unreservedly instructed Dr. Frank Wall, M.D., M.L.C., of Burwood, in all the details of its preparation and culture, and have empowered him to use the knowledge I have imparted according to his discretion. I declare that he is the only person to whom I have ever communicated a knowledge of this discovery of mine,

Mr. Mutch declared that Dr. Wall was not the Government agent when he and Mr. Waddell visited Mr. McGarvie Smith in the first instance, at the beginning of the negotiations. The date of the visit was "some months prior to July 8 of this year." In the statement Mr. McGarvie Smith stated that he wished Dr. Wall to take steps to establish a McGarvie Smith Institute and that the institute should be conducted independently of any public service body. In regard to the fact that Dr. Wall imparted the secret to Dr. Tidswell instead of to a Government officer there was in the same document the passage:—

My wish is that the institute manufacture any other vaccine that the board of control think desirable, and that the institute be under the control of the best available bacteriologist, for preference Dr. Frank Tidswell, whom I have known for many years.

He held that Mr. McGarvie Smith had the right to decide the terms and conditions under which the business he conveyed for the benefit of the citizens, should be conducted. He also held that, instead of an attack being made on Dr. Wall, the House should pass a vote of thanks to him for his public spirit and generosity. In conclusion, Mr. Mutch read a portion of the indenture drawn up and signed by Mr. McGarvie Smith and Dr. Wall, by which the rights of Dr. Wall to the use of the vaccine outside the State of New South Wales, as well as the bacteriological equipment, were handed over to the trustees of the institute.

(To be continued.)

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xiii.

In future, no advertisements inviting applications from medical practitioners for positions in public institutions will be accepted unless the appointment is limited to medical practitioners who are ineligible for military service, or who have returned from military service. The term "ineligible for military service" is used to signify practitioners who are above military age, those who have offered their services and have not been accepted by the military authorities, or those who, for valid reasons, are incapable of applying for a commission in the Australian Army Medical Corps.

Royal Alexandra Hospital for Children, Camperdown, Two Honorary Relieving Medical Officers.

Medical Appointments.

IMPORTANT NOTICE

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other contract practice. Australian Prudential Association Proprietary, Limited. National Provident Association. Mutual National Provident Club.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Rockhampton Associated Friendly Societies. Cloncurry Hospital.

Branch.	APPOINTMENTS.
SOUTH AUSTRALIA. (Hon. Sec., 8 North Terrace, Adelaide.)	Contract Practice Appointments in South Australia. Contract Practice, Appointments at Renmark.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmalm United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

Nov. 12.—Tas. Branch, B.M.A., Council and Branch.
Nov. 12.—N.S.W. Branch, Ethics Committee.
Nov. 13.—Vic. Branch, B.M.A.
Nov. 13.—North-Eastern Med. Assoc. (N.S.W.).
Nov. 14.—Vic. Branch, B.M.A., Council.
Nov. 19.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Nov. 20.—W. Aust. Branch, B.M.A.
Nov. 22.—Q. Branch, B.M.A., Council.
Nov. 26.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Nov. 26.—Vic. Branch, B.M.A., Ballot Paper for Election of Office-bearers Issued.
Nov. 27.—Vic. Branch, B.M.A., Council.
Nov. 28.—S. Aust. Branch, B.M.A.
Nov. 29.—N.S.W. Branch, B.M.A.
Dec. 3.—N.S.W. Branch, B.M.A., Ethics Committee.
Dec. 3.—Vic. Branch, B.M.A., Ballot Papers for Election of Office-bearers Returned.
Dec. 4.—Vic. Branch, B.M.A., Annual; Election of Office-bearers.
Dec. 6.—Q. Branch, B.M.A.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.
Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.
All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.